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OM nucleic - nucleic search, using sw model

Run on: January 17, 2005, 12:56:43 ; Search time 2206.61 Seconds.
(without alignments)
16548.056 Million cell updates/sec

Title: US-09-551-494-5
Perfect score: 6355
Sequence: 1 gatgttttaatagttttgcga.....taacgcggttagcgccca 6355

Scoring table: IDENTITY_NUC
Gapop 10.0 , Gapext 1.0

Searched: 4300275 seqs, 2872944193 residues

Total number of hits satisfying chosen parameters: 8600550

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Published Applications NA:*

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	6355	100.0	6355	US-10-321-434-7	Sequence 7, Appli
2	2468	38.8	6395	US-09-962-527-1	Sequence 1, Appli
3	2468	38.8	6395	US-10-828-029-1	Sequence 1, Appli
4	2466.4	38.8	6395	US-10-338-592-2	Sequence 2, Appli
5	2455.4	38.6	6439	US-09-962-527-2	Sequence 2, Appli
6	2455.4	38.6	6439	US-10-828-029-2	Sequence 2, Appli
7	2452.2	38.6	6475	US-09-962-527-4	Sequence 4, Appli
8	2452.2	38.6	6475	US-10-828-029-4	Sequence 4, Appli
9	2449.8	38.5	6446	US-09-962-527-5	Sequence 5, Appli
10	2449.8	38.5	6446	US-10-828-029-5	Sequence 5, Appli
11	2431.2	38.3	6425	US-09-962-527-3	Sequence 3, Appli
12	2431.2	38.3	6425	US-10-828-029-3	Sequence 3, Appli

13	2291.4	36.1	11222	17	US-10-679-620-73	Sequence 73, Appli
14	2291.4	36.1	11641	9	US-09-993-059-33	Sequence 33, Appli
15	2291.4	36.1	11641	15	US-10-103-327-33	Sequence 33, Appli
16	2291.4	36.1	11641	16	US-10-684-300-13	Sequence 13, Appli
17	2291.4	36.1	11641	16	US-10-684-349-13	Sequence 13, Appli
18	2291.4	36.1	11641	18	US-10-851-388-33	Sequence 33, Appli
19	2289.8	36.0	10600	15	US-10-356-708-1	Sequence 1, Appli
20	2289.8	36.0	10600	17	US-10-280-913A-1	Sequence 1, Appli
21	2289.8	36.0	10600	17	US-10-684-134-1	Sequence 1, Appli
22	2289.8	36.0	10600	17	US-10-637-758-1	Sequence 1, Appli
23	2289.8	36.0	10624	15	US-10-356-708-2	Sequence 2, Appli
24	2289.8	36.0	10624	17	US-10-280-913A-2	Sequence 2, Appli
25	2289.8	36.0	10624	17	US-10-684-134-2	Sequence 2, Appli
26	2289.8	36.0	10624	17	US-10-637-758-2	Sequence 2, Appli
27	2286.6	36.0	7685	9	US-09-949-317-22	Sequence 22, Appli
28	2286.6	36.0	7685	9	US-09-949-317-25	Sequence 25, Appli
29	2286.6	36.0	7685	9	US-09-949-316-22	Sequence 22, Appli
30	2286.6	36.0	7685	9	US-09-949-316-25	Sequence 25, Appli
31	2286.6	36.0	7685	14	US-10-200-051-22	Sequence 22, Appli
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34	2286.6	36.0	7686	14	US-10-200-051-23	Sequence 23, Appli
35	2286.6	36.0	7687	9	US-09-949-317-24	Sequence 24, Appli
36	2286.6	36.0	7687	9	US-09-949-316-24	Sequence 24, Appli
37	2286.6	36.0	7687	9	US-09-949-317-27	Sequence 27, Appli
38	2286.6	36.0	7688	9	US-09-949-317-27	Sequence 27, Appli
39	2286.6	36.0	7688	14	US-10-200-051-24	Sequence 24, Appli
40	2286.6	36.0	7688	9	US-09-949-316-27	Sequence 27, Appli
41	2286.6	36.0	10132	14	US-10-200-051-27	Sequence 27, Appli
42	2286.6	36.0	10132	9	US-09-978-199-3	Sequence 3, Appli
43	2285	36.0	7926	14	US-10-119-330-1	Sequence 1, Appli
44	2285	36.0	7926	16	US-10-632-240-1	Sequence 1, Appli
45	2285	36.0	10607	15	US-10-098-155-1	Sequence 1, Appli

ALIGNMENTS

RESULT 1
US-10-321-434-7
; Sequence 7, Application US/10321434
; Publication No. US20030135882A1
; GENERAL INFORMATION:
; APPLICANT: Metzlaff, Michael
; APPLICANT: Meulwater, Frank
; APPLICANT: Gosse, Veronique
; APPLICANT: Fach, Ina
; TITLE OF INVENTION: Improved methods and means for delivering inhibitory RNA to plan
; FILE REFERENCE: FKMOD
; CURRENT APPLICATION NUMBER: US/10/321,434
; CURRENT FILING DATE: 2002-12-18
; NUMBER OF SEQ ID NOS: 18
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 7
; LENGTH: 6355
; TYPE: DNA
; ORGANISM: Artificial
; FEATURE:
; OTHER INFORMATION: cdna sequence of the genome of TMV-U2
US-10-321-434-7

Query Match	100.0%	Score 6355	DB 15	Length 6355
Best Local Similarity	100.0%	Pred. No. 0		
Matches 6355	Conservative 0	Mismatches 0	Indels 0	Gaps 0
QY	1	GATGTTTTTAATAGTTTTCGACAAACAATTTAAACAAACAAACATATTACAAACAACA 60		
Db	1	GATGTTTTTAATAGTTTTCGACAAACAATTTAAACAAACAAACATATTACAAACAACA 60		
QY	61	AACAACAACAATGGGACACATCAATCTATAATTAGCAACGCCCTTCTTTGAAGCGTGAG 120		
Db	61	AACAACAACAATGGGACACATCAATCTATAATTAGCAACGCCCTTCTTTGAAGCGTGAG 120		

QY	121	TGTTAAACACCTCTCGTTAAATGACCTTGCAGAGGCGCATGTACGATACGGCGGTGA	180
DB	121	TGTTAAACACCTCTCGTTAAATGACCTTGCAGAGGCGCATGTACGATACGGCGGTGA	180
QY	181	AGAAATTAACGCGCGGCGGTAGACCAAGGTCAACTTTTCCAAAACCTATTAGCGAAGA	240
DB	181	AGAAATTAACGCGCGGCGGTAGACCAAGGTCAACTTTTCCAAAACCTATTAGCGAAGA	240
QY	241	GCAACGCTTCTAGTCTCAACGCGTACCGGAGTTCCAGATTACCTTTTATAACTCA	300
DB	241	GCAACGCTTCTAGTCTCAACGCGTACCGGAGTTCCAGATTACCTTTTATAACTCA	300
QY	301	AAATGCCGTACACAGTTTGGCTGGAGTTTGAGAGCAATTAGAAATCTGATGCT	360
DB	301	AAATGCCGTACACAGTTTGGCTGGAGTTTGAGAGCAATTAGAAATCTGATGCT	360
QY	361	ACAAGTTCCCTATGGATCCGACATATGATATAGGTGGAACTTTGACAGCACTTTGTT	420
DB	361	ACAAGTTCCCTATGGATCCGACATATGATATAGGTGGAACTTTGACAGCACTTTGTT	420
QY	421	CAAAGCAGGGATTACGTGCATTTGCTGTATGCCCAATCTGGACATACGAGATATAATGAG	480
DB	421	CAAAGCAGGGATTACGTGCATTTGCTGTATGCCCAATCTGGACATACGAGATATAATGAG	480
QY	481	GCACGAGGACAAAGGACTCAATTGAGATGATATTTGTCAGATTTGCTCGTTCTTAACAA	540
DB	481	GCACGAGGACAAAGGACTCAATTGAGATGATATTTGTCAGATTTGCTCGTTCTTAACAA	540
QY	541	GGTAAATTCCTGAGTTTCAAAGGGAGGCTTTTAACAGGTATGCAAGACTCCCAACGAAGT	600
DB	541	GGTAAATTCCTGAGTTTCAAAGGGAGGCTTTTAACAGGTATGCAAGACTCCCAACGAAGT	600
QY	601	CTGCTGCTCTAAACCTTTTCAAGGATGTGCAATACATCCGCGCAGAGAAATAGTGGTAGAAG	660
DB	601	CTGCTGCTCTAAACCTTTTCAAGGATGTGCAATACATCCGCGCAGAGAAATAGTGGTAGAAG	660
QY	661	ATACGCTGTGCTGCGACAGTTTGTATGATATTCCTGTCGATGAGTTTGGAGCTGCGTT	720
DB	661	ATACGCTGTGCTGCGACAGTTTGTATGATATTCCTGTCGATGAGTTTGGAGCTGCGTT	720
QY	721	AATATCTAAGATATACATGTATGTTATGCGAGCTTCCATTTTGGCAGAGCAATTAATCT	780
DB	721	AATATCTAAGATATACATGTATGTTATGCGAGCTTCCATTTTGGCAGAGCAATTAATCT	780
QY	781	AGACGAGCGAGGTTACGCTTAATGAATAGCGGCAACTTTCAAAGAGAGAGGTGATGA	840
DB	781	AGACGAGCGAGGTTACGCTTAATGAATAGCGGCAACTTTCAAAGAGAGAGGTGATGA	840
QY	841	TGTTTCTTTTCTTTGCTGATGAAAGTACTTTTAAATTAATAGTCATAAATACAAAATAT	900
DB	841	TGTTTCTTTTCTTTGCTGATGAAAGTACTTTTAAATTAATAGTCATAAATACAAAATAT	900
QY	901	CTTGCAATTATGATTAATCTTACTTTCTGCTTCTAGTAGAATAGTTTACTTTAAGGA	960
DB	901	CTTGCAATTATGATTAATCTTACTTTCTGCTTCTAGTAGAATAGTTTACTTTAAGGA	960
QY	961	ATTTTATGATCATTAGGTTTAACTTTGTTTGTAAATTTTAAAGATGATACCTTATAT	1020
DB	961	ATTTTATGATCATTAGGTTTAACTTTGTTTGTAAATTTTAAAGATGATACCTTATAT	1020
QY	1021	TCTGTACAAGAGTTTGAACAAGTGGGTGTAGATGATCAGTTCTATGAGCGGATGA	1080
DB	1021	TCTGTACAAGAGTTTGAACAAGTGGGTGTAGATGATCAGTTCTATGAGCGGATGA	1080
QY	1081	AGACGCTTTTGTCTTACAAGAAAACCTTGGCCATGTTCAACACTGAAAGCAATCTTTAG	1140
DB	1081	AGACGCTTTTGTCTTACAAGAAAACCTTGGCCATGTTCAACACTGAAAGCAATCTTTAG	1140
QY	1141	AGACGCGCTTCGGTTAACTTTTGGTTCCCTAAGATGAAGGACATGGTATAGTACCGCT	1200
DB	1141	AGACGCGCTTCGGTTAACTTTTGGTTCCCTAAGATGAAGGACATGGTATAGTACCGCT	1200

QY	1201	GTTTGAGGGTCTATTATCCAGCAAAAAGATGACAAGGAGTGAGGTCAATTGTTAATCGTGA	1260
DB	1201	GTTTGAGGGTCTATTATCCAGCAAAAAGATGACAAGGAGTGAGGTCAATTGTTAATCGTGA	1260
QY	1261	CTTTCGTTTACACAGTGTCTTAATCATATCAGAACATATCAAGCCAAAGCGTTAACTTACCA	1320
DB	1261	CTTTCGTTTACACAGTGTCTTAATCATATCAGAACATATCAAGCCAAAGCGTTAACTTACCA	1320
QY	1321	GAACTATATATCTTTTCGTGGAGTCTATAAGATCCCGCGTGATATAATCAATGTTGTTACTGC	1380
DB	1321	GAACTATATATCTTTTCGTGGAGTCTATAAGATCCCGCGTGATATAATCAATGTTGTTACTGC	1380
QY	1381	TAGTCTCAATGGGATGTAGATAAAGCAATTTCTTCAACCCCTGTCAATGACTTTCTTCTT	1440
DB	1381	TAGTCTCAATGGGATGTAGATAAAGCAATTTCTTCAACCCCTGTCAATGACTTTCTTCTT	1440
QY	1441	GCAGACTAAGCTGGCTGGCTTCAAGACGATATAGTAATGGGAAAGTTTCGGTGTCTGA	1500
DB	1441	GCAGACTAAGCTGGCTGGCTTCAAGACGATATAGTAATGGGAAAGTTTCGGTGTCTGA	1500
QY	1501	TAAACCACTTCTGAACTTATTTGGGATGAGTGGGCAAAATTTTGGAAAGCTTTTCCC	1560
DB	1501	TAAACCACTTCTGAACTTATTTGGGATGAGTGGGCAAAATTTTGGAAAGCTTTTCCC	1560
QY	1561	CACTATCAAGAGAGATTGTTGAGCAGGAAATTTCTGGATGTAACTGTAGAAATGCTCTGAA	1620
DB	1561	CACTATCAAGAGAGATTGTTGAGCAGGAAATTTCTGGATGTAACTGTAGAAATGCTCTGAA	1620
QY	1621	GATCAAGATCCAGATCTGTATGTCAATGGAAGACAGGTTTCGTAGCTGAATACACCAA	1680
DB	1621	GATCAAGATCCAGATCTGTATGTCAATGGAAGACAGGTTTCGTAGCTGAATACACCAA	1680
QY	1681	GTCGAGAGATTACCGCATCTAGATATCAAGAGAGCACTTAGAAGAGCTGAGCAATGTA	1740
DB	1681	GTCGAGAGATTACCGCATCTAGATATCAAGAGAGCACTTAGAAGAGCTGAGCAATGTA	1740
QY	1741	CGACCGCTTATCAGAAATTTATCTTCTTAAAGGCTCTGATTAATTTTCGATATCCGAAGTT	1800
DB	1741	CGACCGCTTATCAGAAATTTATCTTCTTAAAGGCTCTGATTAATTTTCGATATCCGAAGTT	1800
QY	1801	CAAGACATGTCAAGGCTTTAGATGTTAGTCTGATGTGGCAGCACGAGTAATCGTTGC	1860
DB	1801	CAAGACATGTCAAGGCTTTAGATGTTAGTCTGATGTGGCAGCACGAGTAATCGTTGC	1860
QY	1861	AGTGGCCGAGATAGAGCGGTTTAACTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTT	1920
DB	1861	AGTGGCCGAGATAGAGCGGTTTAACTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTTCTT	1920
QY	1921	GGCTAAGGCTCTTAAAGCACGCGCTCTGAGGCGGTGTTATGTTGAAACCGACATCCGA	1980
DB	1921	GGCTAAGGCTCTTAAAGCACGCGCTCTGAGGCGGTGTTATGTTGAAACCGACATCCGA	1980
QY	1981	AGAGTGAAACGPAATAAATTTTCTATTGCTGAGAAAGGAGATTGCTGTGTGTGCGAGA	2040
DB	1981	AGAGTGAAACGPAATAAATTTTCTATTGCTGAGAAAGGAGATTGCTGTGTGTGCGAGA	2040
QY	2041	AACTCATGTTTGAAGCAATGCTAACTTAGAGCACAGGAGTTGGAGTCCCTCAACGATTT	2100
DB	2041	AACTCATGTTTGAAGCAATGCTAACTTAGAGCACAGGAGTTGGAGTCCCTCAACGATTT	2100
QY	2101	CCATTAAGGCTTCGGTGGATGTGTGATTACAAAGCAATGGCATCGGTTGTCTACACTGG	2160
DB	2101	CCATTAAGGCTTCGGTGGATGTGTGATTACAAAGCAATGGCATCGGTTGTCTACACTGG	2160
QY	2161	CTCACTAAAAGTTCAACAAATGAAGAACTATGTGACAGTTCGTTGTGTCGCG	2220
DB	2161	CTCACTAAAAGTTCAACAAATGAAGAACTATGTGACAGTTCGTTGTGTCGCG	2220
QY	2221	CACTGTATCAAACTCTATGCAAGTCACTAAAGGATGAAGTTCGTTGATTTCCAG	2280
DB	2221	CACTGTATCAAACTCTATGCAAGTCACTAAAGGATGAAGTTCGTTGATTTCCAG	2280
QY	2281	GGAGAAAGTTGTTGTTGGGATGTCACTTTTGAAGAAAGTGGCTCTCTCAAACTGCGGCCAA	2340

Db	2281	GGAGAAAGTTGGTGTGGGATGTCACTTTGAAAGAGTGGCTCCTCAAACTCGGCGCA	2340	Db	3361	CTCCTTCTTTTAGAAATGTATATGTAGTAAGCAGGTAGTAGTACATTTACAGATGGA	3420
Qy	2341	AGGTCATTCAATGGGAGTGTCTGGATTACAAGGGGAAATGTTTACTGCATCTTATC	2400	Qy	3421	TGCAGTGTCAAGGTCATAAATCTCTTGTGGCAACACCTAAATCAGGAGACTTTCCAGA	3480
Db	2341	AGGTCATTCAATGGGAGTGTCTGGATTACAAGGGGAAATGTTTACTGCATCTTATC	2400	Db	3421	TGCAGTGTCAAGGTCATAAATCTCTTGTGGCAACACCTAAATCAGGAGACTTTCCAGA	3480
Qy	2401	TTATGAAGGAGATAGAAATGTGTGACTGAGAGCGACTGGAGAGGGTGGCTGTATCACTGA	2460	Qy	3481	TCTACAGTTTCTATTACGATGTATGCCCTCGCTGTAATAGTACTATATCTTAAACAAGTATGA	3540
Db	2401	TTATGAAGGAGATAGAAATGTGTGACTGAGAGCGACTGGAGAGGGTGGCTGTATCACTGA	2460	Db	3481	TCTACAGTTTCTATTACGATGTATGCCCTCGCTGTAATAGTACTATATCTTAAACAAGTATGA	3540
Qy	2461	TACAATGATATTTCTGATATTGCAAGTCTCAAAATCTGAGGAAACAATAGAGACGG	2520	Qy	3541	TGCTGTACCATGAGGTTTACGATTAATAGTCTTAAATGTGAAGGATTTGTTCTTGATTT	3600
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Qy	2521	TGAACCCCGAAGCTTACTCAAGATGGTACTTTGTGGATGGGTCCTGGTGTGGAA	2580	Qy	3601	TTCCAAAGTATTCCGATGCCAAAGGAGGTGAACCATGTCTAGAGCCAGTTTGGGTAC	3660
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Qy	2581	GTACAAAGGAGATTTTGAAGATTTGATCTTTGATGAGGATTTGATCTTGGTTCCTGGAA	2640	Qy	3661	CGCGCGGAAACCGCCAAAGGCTGCAGGACTACTTCGAAATCTGGTTGCAATGATTTAAAG	3720
Db	2581	GTACAAAGGAGATTTTGAAGATTTGATCTTTGATGAGGATTTGATCTTGGTTCCTGGAA	2640	Db	3661	CGCGCGGAAACCGCCAAAGGCTGCAGGACTACTTCGAAATCTGGTTGCAATGATTTAAAG	3720
Qy	2641	ACAAGCTGCTGATGATCAAGAGAGGGCTAATTCATCTGGAATGATAGAGCCCAAT	2700	Qy	3721	AAATTTCAACGACACAGACCTGACGGGACGATTTGACATTTAGAGACACCGCATCTGTGT	3780
Db	2641	ACAAGCTGCTGATGATCAAGAGAGGGCTAATTCATCTGGAATGATAGAGCCCAAT	2700	Db	3721	AAATTTCAACGACACAGACCTGACGGGACGATTTGACATTTAGAGACACCGCATCTGTGT	3780
Qy	2701	GGACATGTGAGAACGGTAGATTCACTTCTAATGTCATCCAAACCGGATCACACAAGAG	2760	Qy	3781	AGTAGATAGTTTGTGATAGCTATTATTTAAAGGAAATATACAAAAATATTGC	3840
Db	2701	GGACATGTGAGAACGGTAGATTCACTTCTAATGTCATCCAAACCGGATCACACAAGAG	2760	Db	3781	AGTAGATAGTTTGTGATAGCTATTATTTAAAGGAAATATACAAAAATATTGC	3840
Qy	2761	GCCTTTTATTGATGAAGGGTTGATGTGCACACCGGTTGTGTTAACTTCTCGTGTCTTAT	2820	Qy	3841	TGGAGTGTAGCAAGGATTTCAATGATGAGATGGTTGGAAACAGGAAAGAGTACTATT	3900
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Qy	2821	CTCTGTTTGGCAATCGCATACATTTACGGAGATACACAGCAGATTCCTTTCAATTAACAG	2880	Qy	3901	GGACGACTTGGCTTAACTACAAATTTTACAGATCTCGCGGCAATCGATCAGTACAAGACAT	3960
Db	2821	CTCTGTTTGGCAATCGCATACATTTACGGAGATACACAGCAGATTCCTTTCAATTAACAG	2880	Db	3901	GGACGACTTGGCTTAACTACAAATTTTACAGATCTCGCGGCAATCGATCAGTACAAGACAT	3960
Qy	2881	AGTTTCAGATTTCCCGTATCCCAACATTTTGAAGAGCTGCAAGTGGATGAGTTCAGAT	2940	Qy	3961	GATCAGGCTCAACCAACAGAAATGGACCTTTCAATTTCAAGATGAAATACCTGCTCT	4020
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Qy	2941	GAGGAGGACCACTGAGATGCCAGGTGATGTGAATTTTCTCAATCGAAGTACGA	3000	Qy	4021	GCAAAACAATTTGTCTACCAATTCGAAGCAGATCAACGGTATTTTGGCGGTTTCTCAGAGCT	4080
Db	2941	GAGGAGGACCACTGAGATGCCAGGTGATGTGAATTTTCTCAATCGAAGTACGA	3000	Db	4021	GCAAAACAATTTGTCTACCAATTCGAAGCAGATCAACGGTATTTTGGCGGTTTCTCAGAGCT	4080
Qy	3001	AGGAGCGGTGACCAACCTTCAACTGTACAAAGATCGGTCTCATCTGAGATGATAGCGG	3060	Qy	4081	TACAAGGTTGCTGCTCGAGGCAATTTGATTTCTAAGAAAGTTTCTTTCTTACTAGGAAAC	4140
Db	3001	AGGAGCGGTGACCAACCTTCAACTGTACAAAGATCGGTCTCATCTGAGATGATAGCGG	3060	Db	4081	TACAAGGTTGCTGCTCGAGGCAATTTGATTTCTAAGAAAGTTTCTTTCTTACTAGGAAAC	4140
Qy	3061	TAAGGAGTACTAAACAGTGTTCCTCAACCACTTAAAGGGGAAATTTGTAATTTCACTCA	3120	Qy	4141	TCCAGAACAGATTTCAAGAAATTTTCTCGGATCTCGATCTCGACGTTTCTTATGATGTGT	4200
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Qy	3121	GGCTGATAAATTTGATTAGAGGAGAGGCTATAAGATGTCAACACCGTTCATCAGAT	3180	Qy	4201	AGAACTGGGATATTTCTAAGTATGATAAGTACAGAACGAGTTTCAATTTGCTGTAGAGTA	4260
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Qy	3181	CCAAGGAGAAACCTTTGAAGATGTGCTGGTTCAGATTGACGCGCAACTCCACTGACTCT	3240	Qy	4261	TGAAATATCGAAAGATTCGGGTCTCAATGAGTTTTTGGCGGAGTGTGGAACAAGGCA	4320
Db	3181	CCAAGGAGAAACCTTTGAAGATGTGCTGGTTCAGATTGACGCGCAACTCCACTGACTCT	3240	Db	4261	TGAAATATCGAAAGATTCGGGTCTCAATGAGTTTTTGGCGGAGTGTGGAACAAGGCA	4320
Qy	3241	GATTTCCAAGTCTTCCCGCATGTTTCTAGTCGTCTGACTAGACACACAAGAGCTTCAA	3300	Qy	4321	CAGGAAACAATTTGAAAGGATTTACATTCGGAATCAAGACATGTCTGTGGTATCAAG	4380
Db	3241	GATTTCCAAGTCTTCCCGCATGTTTCTAGTCGTCTGACTAGACACACAAGAGCTTCAA	3300	Db	4321	CAGGAAACAATTTGAAAGGATTTACATTCGGAATCAAGACATGTCTGTGGTATCAAG	4380
Qy	3301	ATATTACACCGTAGTGTGATCTTTTGTAGTACAGATAATTTAGTGTGTTCTTTTAAG	3360	Qy	4381	GAAAGCGGTGATGTGACTTCTTCAATCGGCAATCTGTTTAAATAGCAGCTTGTCTGGG	4440
Db	3301	ATATTACACCGTAGTGTGATCTTTTGTAGTACAGATAATTTAGTGTGTTCTTTTAAG	3360	Db	4381	GAAAGCGGTGATGTGACTTCTTCAATCGGCAATCTGTTTAAATAGCAGCTTGTCTGGG	4440
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Db	3361	CTCCTTCTTTTAGAAATGTATATGTAGTAAGCAGGTAGTAGTACATTTACAGATGGA	3420	Db	4441	TTCAATTTACCGATGGAAAGGTCATAAAAGGTCTTTTTTGTGGAGACGATTTCCGTTTT	4500

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 Db 4621 CCATGATAAGGGAGCAATAGTGTATATGATCCTTTGAAAGTTGATCTCCAAAATTGGGGC 4680
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RESULT 2

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TITLE OF INVENTION: A PROCESS FOR ISOLATING AND
 PURIFYING VIRUSES SOLUBLE PROTEINS AND PEPTIDES
 FROM PLANT SOURCES

NUMBER OF SEQUENCES: 5

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Dbb 3858 UUGUUCAGUAGAGAGUCUCUCAAUAGAUUGUUUAGAAAAGCAGGAAACAGGUAAACAAUAGGC 3917
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 Qy 5222 TGCTTGCAGAAAGAAATTTCTTTTAAAGCTAATCCCTAATTTTCAATAACATCCGAGGA 5281
 Db 5235 AGCTGCAAAAGAAAGATTTTCAAGTTCAGTTCAGGTCGTTCCCAATTTATGCTAATAACCAACCCAGGA 5294
 Qy 5282 TGCTGAGAGCACCCTGGCAAGTGTAGTGAATATCAAGGAGTGGCTATGGAAGAGG 5341
 Db 5295 CGCGATGAACACGTCGGCAAGTGTAGTGAATATGAAATGGAAGATGTACGCGG 5354
 Qy 5342 ATACTGTCCTTTATCTTTGGAGTTCGTTTCAATTTGTGTAGTACATAAATAAATAAGTAAG 5401
 Db 5355 TTTCTGTCGCTTCTCTCGAGTTTGTGTCGGTGTGTATTGTTTATAGAAATAATAATAA 5414
 Qy 5402 AAAAGTTTCAGGAACGATTTTGTAGTGTGACAGAGCGTCCCAATTTGAACTCACTGA 5461
 Db 5415 ATTAGGTTTGAGAGAGAAGATTACAAACGTGAGAGACGAGGGCCCATGGAACCTTACAGA 5474
 Qy 5462 AAAAGTTTGTGAGAGTTCGTGGATGAAGTACCAATGGCTGTGAAACTCGAAAGGTTTC- 5520
 Db 5475 AGAAGTCGTTGATGAGTTCATGAGAGATGTCCTTATGTGATCAGGCTTGCAAGTTTCG 5534
 Qy 5521 -----CGGAAACAAAAAGAAATGGTAGTATATAATGTTTAATAAT----- 5561
 Db 5535 ATCTCGAACCGGAAAAAGAGTGTATGTCGCAAGGGAATAATAGTAGTAATGATCGGTC 5594
 Qy 5562 -----AAGAAATAAATAACAGTGTGAAGAGGGTTTTTAAATTTGAGGAATTCAGGA 5614
 Db 5595 AGTGCGAACAGAACTATAGAAATGTTAAGGATTTTGGAGGAATGAGTTTAAAGAA 5654
 Qy 5615 TAATGTAAAGTATGACGAGT-----CTATCGGTCTATCGAGTACGTTTTTAAATCAAT 5665
 Db 5655 TAATTAATCGATGATGATTCGGAGGCTACTGTCGCGAATCGGATTCGTTTTTA-----AAT 5711
 Qy 5666 ATGCTTTATACAACTCTCCGAGCCAAATTTGTTTACTTATCTTCGCTTACGAGAT 5725
 Db 5712 ATGCTTTACAGTATCACTACTCCATCTCAGTTCGTGTTCTTGTATCAGCGTGGCGGAC 5771
 Qy 5726 CCTGTGAGCTGATCAATCTGTGPACAAATGCAATGGTAAACAGTTTCAACCGCAACAA 5785
 Db 5772 CCAATAGAGTTAATAATTTATGATCTAATGCTTAGGAATCAGTTTCAACACACACAA 5831
 Qy 5786 GCTAGGACAAACAGTCCACAGCAATTTGCGGATGCTCGGAAACCTGCTGCTAGTATGACA 5845
 Db 5832 GCTCGAATCTGCTTTCAAGAGCAATTCAGTGAGGTGTGGAAACCTTCACCAAGTAAT 5891
 Qy 5846 GTGAGATTTCTGCACTCGGATTTCTATGTATAGATATAATTCGACGCTTGTATCGGTTG 5905
 Db 5892 GTTAGGTTCCCTGACAGTACTTTAAGGTGTACAGGTACAAATGCGGTATTAGACCCGCTA 5951
 Qy 5906 ATCAGGGGTTATTAAATAGCTTTGATACAGAAATAGAAATAATAGAGTTGATATCAATCAA 5965
 Db 5952 GTACAGCACTGTTAGGTGCAATTCGACACTAGAAATAGAAATAATAGAGTTGAAATCAG 6011
 Qy 5966 CCCGACCGAATACTACTGAAATCGTTAAACGCACTCAGAGGGTACGATGCTACTGTA 6025
 Db 6012 GCGAAACCCGCACTGCGGAAACGTTAGATGCTACTCTGAGTAGAGACGACGCAACGGTG 6071
 Qy 6026 GCTATAGGGCTTCAATCAATAATTTGGCTAATGCTGTTGCTGGAACCTGGCATGCTTC 6085
 Db 6072 GCCATAGGAGCGCATTAATAATTTAATAGTAGAATTTGATCAGAGAAACCGGATCTTAT 6131

Qy 6086 AATCAAGCAGGCTTTGAGACTGCTAGTGGACTTGTCTGGACCAACAACCTCCGGCTACTTAG 6145
 Db 6132 AATCGGAGCTTTTCGAGAGCTCTTCTGGTTTGGTTCCTGCTGCAACT--- 6188
 Qy 6146 CTATTGTTGTCAGATTTCTTAAATAAAGTCGCTGAAGACTTTAAATTCAGGGTGGCTGA 6205
 Db 6189 -TGAGGTAGTCAAGATGCAATAAATAAACGGAATTGTCTCGTAATCACA-CGTGGTGGC 6246
 Qy 6206 TACCAAAATCAGCAGTGGTTCGTCACATTAATAATAAATGATGTCATATCTGGATCC 6265
 Db 6247 TACGATAACGATAGTGTTCCTCCACCTTAATCGAAGGTTGT-GTCTTGGATCCG 6305
 Qy 6266 AACAGTTAAACATGTGATGCTATCTGTGTATGCTGCTGTAATAAACAATCGGAGGTTTCG 6325
 Db 6306 CGGGTCAATGTATATGTTTCATATACATCCGAGGCACGTAATAAAGCGAGGGTTTCG 6365
 Qy 6326 AATCCTCCCTAAACGCGGAGTAGCGGCCCA 6355
 Db 6366 AATCCCGCGTTACCCCGTAGGGGCCCA 6395

RESULT 5

US-09-962-527-2
 ; Sequence 2, Application US/09962527
 ; Publication No. US20030049813A1
 ; GENERAL INFORMATION:
 ; APPLICANT: GARGER, STEPHEN
 ; HOLTZ, R. BARRY
 ; MCCULLOCH, MICHAEL
 ; TURPEN, THOMAS
 ; TITLE OF INVENTION: A PROCESS FOR ISOLATING AND
 ; PURIFYING VIRUSES SOLUBLE PROTEINS AND PEPTIDES
 ; FROM PLANT SOURCES

NUMBER OF SEQUENCES: 5
 CORRESPONDENCE ADDRESS:
 ADDRESSEE: Howrey & Simon
 STREET: 1299 Pennsylvania Avenue N.W.
 CITY: Washington
 STATE: DC
 COUNTRY: USA
 ZIP: 20004

COMPUTER READABLE FORM:
 MEDIUM TYPE: Diskette
 COMPUTER: IBM Compatible
 OPERATING SYSTEM: DOS

SOFTWARE: FastSeq for Windows Version 2.0
 CURRENT APPLICATION DATA:
 APPLICATION NUMBER: US/09/962,527

FILING DATE: 24-Sep-2001
 CLASSIFICATION: <Unknown>

PRIOR APPLICATION DATA:
 APPLICATION NUMBER: 09/037,751

FILING DATE: 10-march-1998
 ATTORNEY/AGENT INFORMATION:

NAME: Halluin, Albert P
 REGISTRATION NUMBER: 25,277

REFERENCE/DOCKET NUMBER: 00801.0140.999
 TELECOMMUNICATION INFORMATION:

TELEPHONE: 650-463-8109
 TELEFAX: 650-463-8400

TELEX: <Unknown>
 INFORMATION FOR SEQ ID NO: 2:

SEQUENCE CHARACTERISTICS:
 LENGTH: 6439 base pairs

TYPE: nucleic acid
 STRANDEDNESS: single

TOPOLOGY: unknown
 MOLECULE TYPE: Genomic RNA

SEQUENCE DESCRIPTION: SEQ ID NO: 2:
 US-09-962-527-2

Query Match

38.6%; Score 2455.4; DB 10; Length 6439;

Qy	1160	TTTTGGTTCCCTAAGATGAAGGACATGGTGATAGTACCGCTGTTTGGGGTCTTATTACC	1219
Db	1158	UACUGGUUUCCAAAUAGAGGAUUGGUCAUGCAUUAUUCGAAUUCUUGGAG	1217
Qy	1220	AGCAAAAGATGACAAGAGGTGAGGTCAITTTGTAATCGTCACTTCGTTTACACAGTCTT	1279
Db	1218	ACUAGUAGAGGACCGCAAGGAAGUCUAGUGUCCAAGAUUUCUGUUUACAGUGCUU	1277
Qy	1280	AATCATATCAGAAATATCAAGCCAAAGCGTTAACTTTACCAGAACGTATTATCTTTCGTG	1339
Db	1278	AACCAAUUCGAACAUACGCGCAAGACUCUAUACAUCGAAAUUUUGUCCUUGUC	1337
Qy	1340	GAGTCTATAGATCCCGGTGATAATCAATGGTGTATTCTCTAGTCTGAATGGGATGTA	1399
Db	1338	GAUUCGUAUCGUAUCGAGGUAUACAUAACGGUGUGACAGCGAGGUCGGAUUGGGAUGUG	1397
Qy	1400	GATAAAGCAATCTTCAACCTTGTCAATGCATTTCTTCTTGACAGTAAAGCTGGCTGG	1459
Db	1398	GACAAUUCUUUUAACAUCUUGUCACAGUUUUAUCCUGCAUACAAGCUUGCGGUU	1457
Qy	1460	CTTCAAGACGATATAGTAATGGGAAAGTTTCGTGTGTTGGATTAAGACCACTTCTGAAC	1519
Db	1458	CUAAAGGAUCAUACUAGUAGCAAGUUUAGUCUGUUUCGAAACCGUGGCCAGCAU	1517
Qy	1520	ATTTGGGATGAGGTGGGCAAAATTTTTTGGAAAGCTTTCCCCACTATCAAGAGAGATTG	1579
Db	1518	GUGUGGAUGAGAUUUCGUGCGUUUGGGAACGCAUUUCCUCCUGAAGAGAGGCUC	1577
Qy	1580	GTGAGCAGGAAAATCTTGGATGTAAAGTCGAAATGCTCTGAAGATCAAGATCCAGATCTG	1639
Db	1578	UUGAAACAGGAAAUAUACAGAGUGGCAGCGCAUUAUAGAGAUCAAGGUGGUCUGAUCUA	1637
Qy	1640	TATGTCATGGAAGAAGACAGGTTCTGTAGCTGAATACACCAAGTCTGAGGAGTTACCGCAT	1699
Db	1638	UAUGUGACCUUCCACGACAGUAUAGUCATGAGUACUAGGCGCUCUGUGGACUCCGCGG	1697
Qy	1700	CTAGATATCAAGAAGGACTTAGAAGAAGCTGAGCAAAATGTACGACGGTTATCAGAATTA	1759
Db	1698	CUUGACAUUAGGAAGAGAUGGAAGAAACGGAAGUAGUAUACAUGCAUUUCAGAGUUA	1757
Qy	1760	TCTATCCTTAAGGGTGTGTAATTTTCGATATCGCGAAGTTTCAAAGACATGTGCAAGGCT	1819
Db	1758	UCGUGUUUAGGGAGUCUGACAAAUUCGAUUGUAGUUAUUCUCCAGAUUGGCCAAUCU	1817
Qy	1820	TTAGATGTAGTCTGTGTGGCAGCACGAGTATCGTTCCAGTGGCCGAGATAGAGC	1879
Db	1818	UUGAAGUGGACCAUAUGACGCGCAGGAAGUUUAUUGCGGGUCAUGACCAUAGAGAGC	1877
Qy	1880	GGTTTAACTCTTACTTTTGTAAAGCCACGAGAGAAATGTGGCTAAGGCTCT-----T	1933
Db	1878	GGUCUGACUCACAUUUGAACGACCUACUGAGGCGAAUUGUGCGUAGCUUUAACAGGAU	1937
Qy	1934	AAAAGCAGCGGCTGTGAGCGGTGGTATGTCTTGAACCCGACATCCGAAGAGGTGAACGTA	1993
Db	1938	CAAGAGAAGGCUUCAGAAGGUGUUUGUAGUUAUCCUACAAGAGAAGUUGAAGAACCGUCC	1997
Qy	1994	AATAAATTTTCTATTGTGTGAAAAGGAGATTTGCCTGTGTGTGCAGAAAGTCATGTTTG	2053
Db	1998	AUGAAGGUUUGAUGGCCAGGAGAGAUUAUAAUUCUGGUUUGUGAGAUCAUCCG	2057
Qy	2054	ACGAATGCTAATTAGAGCACAGGAGTTGGAGTCCCTCAACGATTTCCATAAGGCTTGC	2113
Db	2058	GAGUCGUCCAUUCUAAAGAACGAGAGAUAGAGUUCUUUAGAGCAGAGUUCAUUAGGCAACG	2117
Qy	2114	GTGATAGTGTGATTACAAAGCAAAATGSCATCGGTTGTCTACACTGCGCTCACTCAAGTT	2173
Db	2118	GCAGUUCGUUAUUCUUAAGCAGAUAGUCUGAUUGUGUACACGGUCCGUAUUAAGUU	2177
Qy	2174	CAACAAATGAAGAACTATGTGGACAGTTTGGCAGCTTTCGTTGTCCGCCACTGTATCAAAT	2233
Db	2178	CAGCAAAUGAAAAACUUUAUCGAVAGCCTUGGAGCAUCAUACUGUCUGCGGUGUCGAU	2237

QY	2234	CTATGCAAGTCATTAAGAGTAGAGTCGGGTATGATTTCTGATTTCCAGGGGAGAAAGTTGGT	2293
DB	2238	CUUCGUAAGAUCCUCAAAGAUACAGCUGCUUAUGACCUUGAAACCCGUCUAAAAGUUGGA	2297
QY	2294	GTTTGGGATGTCACTTTTGAAAAGTGGCTCCTCAAAACCTCGCGGCCAAAGGTCAATTCATGG	2353
DB	2298	GUCUGAUGUGUGAUCUACGGAAGUGUGUAUCAAACCAACGCGCAAGAGUCUGCAUGG	2357
QY	2354	GGAGTGTCTCGGATTACAAAGGGGAAAATGTTTACTTGCACCTTCTATCTTATGAAGAGAT	2413
DB	2358	GGUGUGUGUAGAACCCACGCGAGAGAUCAUGUGGCGCUUUGGNAUAUGAUGAGCAG	2417
QY	2414	AGAAATGTTGACTGAGAGCGACTGGAGAGGGTGGCTGTATCATCTGATACAAATGGGTATAT	2473
DB	2418	GGUGUGUGACAUUGCGAUGAUGAGAGAAGUAGUGUCAGCUCUGAGUCUGUGUUUAU	2477
QY	2474	TCTGATATTGCAAGCTCCHAAATCTGAGGAAAACAAATGAGAGACGGTGAACCCACGAA	2533
DB	2478	UCCGACAUUGCGGAAACUCAGAAUCUGCGCGAGACUGCUUCGNAACGGAGAACCGCAUGUC	2537
QY	2534	CCTACTGCAAGATGGTACTTGTGGATGGGGTGCCTGGTTGTGCGAAAGTACAAAGAGAT	2593
DB	2538	AGUAGCGCAAGGUUGUUCUUGGACGAGAUUCUGGGCUGUGGGAAAAACCAAGAAUU	2597
QY	2594	TTTGAAGATTTGATCTTTGATGAGGATTTTGATCTTGGTTCTCGAAAAACAAGTGTGCTGT	2653
DB	2598	CUUCCAGGGTUAUUUUUGAAGAAUCUAUUUUAGUACUCUGGAAGCAAGCCGCGAA	2657
QY	2654	ATGATCAGAGAAGGGCTAATTCATCTGGACTGATTAAGAGCCCAATGGAACAATGTGAGA	2713
DB	2658	AUGAUCAGAGACGUGCGAAUUCUCAGGGAUUUUGUGGCCACGAGGACAAACGUUAAA	2717
QY	2714	ACGGTAGATTCACTTTTAATGCATCCAAAACCGCATCA-----CAAGAGGCTT	2764
DB	2718	ACCGUAUUCUUCAUGAUGAUUUUGGAAAAGACACGCGUCUGAUCUACAGAGUUA	2777
QY	2765	TTTATTGATGAAGGGTTGATGCTGCACACCGGTTGTGTAACTTCTCGTGGCTTATCTCT	2824
DB	2778	UUCAUCAUGAAGGGUUGAUGUGCAUCUGGUUGUUAUUUUUCUGUGGCGAUGUCA	2837
QY	2825	GGTTGCAACATCGATACATTTACGGAGATACACAGCAGATTCCTTTTCATTACAGATTT	2884
DB	2838	UUGUGCGAAAUUGCAUUGUUUACGGAGACACACAGCAGAUUCCCAUCAUCAUAGAGUU	2897
QY	2885	CAGAAATTTCCGTTATCCAAACACTTTTGAAGCTGCAAGTGGATGAAGTTGAGATGAGG	2944
DB	2898	UCAGAUUUCUGUACCCCGCCAUUUUGCCAAUUGGAUUGACGAGGUGGAGACACGC	2957
QY	2945	AGGACCACACTGAGATCCCGAGGTGATGTGAATTTTTTCTCAAACTCGAAGTACGAAGGA	3004
DB	2958	AGAACUACUCUCGUGUCCAGCGCAUGUCACACAUAUUCUGAACAGAGGAUAUGAGGGC	3017
QY	3005	CGGTGACAAACCATTCATGTAACAACGATTCGGTCTCATCTGAGATGATAGCGGTTAAG	3064
DB	3018	UUUGUCAUGAGCACUUCUCGGUUAAAAGUGUCUGUUCGCGAGGAGUUGUCGCGGAGCC	3077
QY	3065	GGAGTACTAAACAGTGTTCCAAACCACTAAAAGGGAAAAATGTAACTTTTCACTCAGGCT	3124
DB	3078	GCCGUGAUCUACCGAUCUCAAACCCUUGCUGGCGAAGAUCCUGACUUUUUACCAUUG	3137
QY	3125	GATAAAATTTGAGTTAGAGGAAGGGCTATAAGAATGTGAACACCGTTTCATGAGATCCAA	3184
DB	3138	GAUAAAGAGCUCUGCUUUAAGAGGGUAUUCAGAUUUCACACUGUGCAUGAAGUGCAA	3197
QY	3185	GGAGAAACCTTTGAAGATGTGTCCGTGGTCAGATTTGACGGCAACTCCACTGACTCTGTAT	3244
DB	3198	GGCGAGAGACAUACUCUGAUGUUUCAUUAUGUAGGUUAAACCCCUACACCAUCUCAUUA	3257
QY	3245	TCCAAGTCTTCCCGCATGTTCTAGTCGCTCTGACTAGACACACAAAGAGCTTCAAAATAT	3304
DB	3258	GCAGGAGACAGCCCAUAUUUUUGUGCGCAUUGUUAAGGACACACCUUUGCUCUACUACU	3317
QY	3305	TACACCGTAGTGTAGTATCTTTTAGTACAGATAATTAGTATGTTGTTCTTTTAAGTCC	3364

Db 2778 UUAUUAUGAAGGUGUUGAUUGCAUACUGGUGUGUUAUUUUUUGUGCGGAUGUCA 2837
Qy 2825 GGTTCGCAATCGCATACATTTACCGAGATACACAGCAGATTCTCTTTCAATTAACAGATT 2884
Db 2838 UUGUGCGAAUUGCAUUAUGUUAUUGCGAGACACACAGCAUUAUCCAUACAUAUAGAGUU 2897
Qy 2885 CAGAAATTCCTCGATCCCAACATTTTGAGAGCTGCAAGTGGATGAGTTCAGATGAGG 2944
Db 2898 UCAGGAUUCUCCGUAUCCCGCCCAUUUUGCCAAUUGGAAUUGAUGAUGGAGACACGC 2957
Qy 2945 AGGACACACACTGAGATGCCAGGTGATGTGAATTTTCTTACAAATCGAAGTACGAAGA 3004
Db 2958 AGAACUACUUCUGUUGCCAGCGAUGUACACAUUUCUGAAACAGGAGAUUAGGCGC 3017
Qy 3005 GCGGTGACACACCTTCAATGTACAAAGATCGGTCTCATCTGAGATGATAGCGGTAG 3064
Db 3018 UUUUGCAUGAGCAUUCUUGGUAUAAAGUUCUUGUUCGAGGAGUUGUGCGGAGGCC 3077
Qy 3065 GGAGTACTAAACAGTGTTCCTAAACCACTAAAGGGAATTTGTAATCTTCACTCAGGCT 3124
Db 3078 GCGGUGAUAUCCGGAUUCUCAAACCCUUGCAUGGCAAGAUCCUGAUUUUACCCNAUGC 3137
Qy 3125 GATAAATTTGAGTTAGAGGAGAGGCTATTAAGATGTGAACACCGTTCATGAGATCCAA 3184
Db 3138 GAUAAAGAGCUCUGCUUAAGAGGUAUUCAGAUUGUACACUCUGCAUGAAGUGCAA 3197
Qy 3185 GGAGAAACCTTTGAAGATGTGCTGCTGATGACATTCAGCGCAACTCCACTGACTCTGATT 3244
Db 3198 GCGGAGACAUACUCUGAUGUUAUACUAGUAGUUAACCCUACACACAGUCUCCAUU 3257
Qy 3245 TCCAAGTCTTCCCGGATGTTCTAGTCGCTCTGACTAGACACACAAAGAGCTTCAATAT 3304
Db 3258 GCAGGAGACAGCCCAUUGUUGUGGCAUUGUAGGACACACUUGUGCUCAAGUAC 3317
Qy 3305 TACACCGTAGTGTAGATCCTTTAGTACAGATAATTTAGTATTGTTCTTTTAACTCC 3364
Db 3318 UACACUUGUUAUGGAUCCUUUAUGUAUUAUAGAUUAGAGAAUUAUAGUUGACUCG 3377
Qy 3365 TTCCCTTTAGAAATGTATGTTAGAGCAGGTAGTAGACAAATTAACAGATGGATGCA 3424
Db 3378 UACUUGUAUGAUUAGUUAAGGUGGAGUAGGAGAACACAAUAGCAAUUAAGAUUGACUCG 3437
Qy 3425 GTGTTCAAGGTCTAATCTCTTTGTGGCAACACCTAAATTCAGGAGACTTTCCAGATCTA 3484
Db 3438 GUGUCAAAGGUUCCAUUUGUUGCAGCGCCAAAGACUGUGUAUUAUUGAUUG 3497
Qy 3485 CAGTCTATTACGATGATGCTCCCTGGTAAATAGTACTATACTTAACAAAGTATGATGCT 3544
Db 3498 CAGUUUAUUAUGAUAAGUGUCUCCAGGCAACAGCACCAUGAUGAAUUAUUGAUGCU 3557
Qy 3545 GTTACCATGAGTTACGTGATAATAGTCTTAATGTGAAGATTGTCTTGTGATTTTCC 3604
Db 3558 GUUACCAUGAGGUGUACUGACAUUUAUGAUGUCAAAGAUUGCAUUAUGGAGAUUGUCU 3617
Qy 3605 AAAAGTATTCGGATGCCAAAGGAGGTGAACCACTGTCTAGAGCCAGTTTTCGTACCGCG 3664
Db 3618 AAGUCUUGUGCGCCUAGAGUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 3677
Qy 3665 GCGGAACCGCAAGGCTGCGAGCACTACTCGAAATCTGTTGATGATTAAGAAAT 3724
Db 3678 GCAGAAUUGCCACGCCAGACUGGACUUAUUGGAAAUUAUUGGCGAUGAUUUAAGGAAC 3737
Qy 3725 TTCAACCCACAGACTGACGGGACGATTGACATTTGAGAGCACCGCATCTGTTGTAGTA 3784
Db 3738 UUUAAACGACCCGAGUUGUGGCAUUAUGAUAUUGAAUUAUUAUUAUUAUUAUUAUUAUUA 3797
Qy 3785 GATAAGTTTTTGTAGTATTATTTATTAAGAAAGAAATATACAAATAATTTTGTGGA 3844
Db 3798 GAUAAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 3857
Qy 3845 GTGATGACGAAGGATTCATGATGATGATGTTGGAACACAGGAAGAGTACTATTGGAC 3904
Db 3858 UUGUUCAGUAGAGUCUCUCAAUAGUUGGUUAGAAAGAGGAGGAAACAGGUAACAAUAGGC 3917

Qy 3905 GACTTGGCTAACTACAATTTTACAGATCTGCGGCATCTGATCAGTACAAGCAATGATC 3964
Db 3918 CAGCGCAGAUUUUGAUUUUGAUUUUGCCAGCAGUUGAUGAUGAUGAUGAUGAUGAUGAUG 3977
Qy 3965 AAGGCTCAACCAACAGAAATTGGAACCTTTCAATTCAGAATGAATACCTCTCTCTGCAA 4024
Db 3978 AAAGCACAACCAAGCAAAAUUGGACACUUAUCCAAACCGAGUAUCCGCGCUUGCAG 4037
Qy 4025 ACAATTGTCTACCATTCGAACGAGATCAACGGTATTTTGGCGGTTTTCT--CAGAGCTT 4081
Db 4038 ACGAUGUGUACCAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAU 4097
Qy 4082 ACAAGTTTGTCTGCTGAGGCAATTTGATTTCTAAGAGTTTCTTTCTTTTCTTAGGAAAACT 4141
Db 4098 ACUAGGCAUUAUCGACAGUUGAUCGAGCAGAUUUUUUUUUUUUUUUUUUUUUUUUUUUUU 4157
Qy 4142 CCAGAACAGATTTCAAGAAATTTTTCGGATCTCGACTCGACGCTTCTCTATGATGTGTTA 4201
Db 4158 CCAGCGCAGAUUGAGGAUUCUUCGGAUUCUCGACAGUACUUGCCGAGUUGAUGUCUUG 4217
Qy 4202 GAACTGGATATTTCTAAGTATGATTAAGTCAAGACGAGTTTCTATTGCTGTAGAGTAT 4261
Db 4218 GAGCUGGAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAU 4277
Qy 4262 GAAATATCGAAAGATTTGGCTCTCAATGAGTTTGTGGCGGAGTGTGAAACCAAGGCAC 4321
Db 4278 GAGAUUCGCGAGAUUUGGUUUUUUAAGACUUCUUGGGAGAAUUGGAAACCAAGGCAU 4337
Qy 4322 AGGAAAAACAATTTGAAGATTTACATTTCTGGAATCAAGACATGCTGTGTATCAAAG 4381
Db 4338 AGAAAGACCCUCCAGGAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 4397
Qy 4382 AAAAGCGGTGATGTACTACTTTTCATCGCAATCTGTTATAATAGCAGCTTGTCTTGGT 4441
Db 4398 AAAGCGGGGAGCUCACGCGUUAUUGGAAACACUGAUGAUUUAUUAUUAUUAUUAUUAUUA 4457
Qy 4442 TCAATGTTTACCGATCGAAAGGTCTATAAAGGTGCTTTTGTGGAGACGATTCCTTTTG 4501
Db 4458 UCGAUGUUCUGAUGGAGAAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAU 4517
Qy 4502 TATTTTTCAAAGGGTTGATTTCCCTGACATTCAGTCTATGCTGCTAACTCATGTGGAT 4561
Db 4518 UAUUUUCAAAGGUGUGAGUUUCCGAGUGGCAACUCGCCGAUUAUUAUUAUUAUUAUUAU 4577
Qy 4562 TTTGAGGCCAATCTGTATAGAAAGGTACGTTACTTTTGTGGTAGATACATCATACAC 4621
Db 4578 UUUAGAGCAAAACUGUUUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 4637
Qy 4622 CATGATAAGGGAGCAATAGTGTATTATGATCCTTTTGAAGTTGATCTCCAAAATTTGGGCA 4681
Db 4638 CACGACAGGAGAUUUGUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 4697
Qy 4682 AAAATATCAAGATTATGATCATCTTAGAAGATTAAAGGTTCTTTGTGCGATGTTGCT 4741
Db 4698 AAACACAUCAAGAUUGGAAACACUUGGAGGUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 4757
Qy 4742 TGTTCGCTCGAAACTGTTGCTTTAGCTTTCCGAGCTGAACGAGCTATCAAGGAGTT 4801
Db 4758 GUUUCGUUAGAAUUAUUGCGUA---UUUACAACAGUUGGACGACGCUUAUUGGAGGU 4814
Qy 4802 CATAAAACCGGATGATGTTTCTGTTTCTTTTAAATGTTGTTTAAACAAATTTTGTGTGAT 4861
Db 4815 CAUAGAGCCGCCUCCAGGUGUUGUUUUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 4874
Qy 4862 AAATTTTATTAGAACTTTGTTTAAATGCTGTAGTCTCAGAGATGATCTGCAAAAT 4921
Db 4875 AAAGUUCUUUUAAGAUUUUUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 4934
Qy 4922 TAGCGAGTTTCAATGATCTTTTCGAAACAGGATGAGTACTTTCGGGCTATTGATGATGAT 4981
Db 4935 CAAUGAGUUUAUUGCACCUGACAAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 4994

CLASSIFICATION: <Unknown>

CLASSIFICATION: CONFIDENTIAL
PRIOR APPLICATION DATA:

APPLICATION NUMBER: US/09/962.527

AFFIDAVIT NUMBER: 03/03/2001
FILING DATE: 24-Sep-2001

FILING DATE: 24-Sep-2001
APPLICATION NUMBER: 09/037

APPLICATION NUMBER: 09
FILING DATE: 10-march-

FILING DATE: 10-March-1997

ATTORNEY/AGENT INFORMATION:

ATTORNEY/AGENT INFORMATION:
NAME: Halluin, Albert P

NAME: HALLUIN, ALBERT P
REGISTRATION NUMBER: 25 277

REGISTRATION NUMBER: 25,2
REFERENCE/DOCKET NUMBER:

REFERENCE/DOCKET NUMBER

TELECOMMUNICATION INFORMATION
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TELEPHONE: 650-463-1500

TELEFAX: 650-463-8411

TELEX: <Unknown>

INFORMATION FOR SEQ ID NO: 5:

SEQUENCE CHARACTERISTICS:

LENGTH: 6446 base pairs

TYPE: nucleic acid

STRANDEDNESS: single

TOPOLOGY: unknown

MOLECULES

Query Match	38.5%;	Score 2439.8;	DB 17;	Length 6446;
Best Local Similarity	44.8%;	Pred. No. 0;		
Matches 2771;	Conservative 1146;	Mismatches 2212;	Indels 60;	Gaps 8;

Qy		20	ACAACAACTATTAACAAAAAACAATATTATTAACAAACAAACAAACAAATGGCAC	79
Db		18	ACCAACAAACAAACAAACAAACAAACAAUUAUUACAUAUCAAUGGCGAUAC	77
Qy		80	ATACAATCTATATTTAGCAACGCCCTTCTTTGAAGCGTGAGTGTGTAACAAACACTTCGTT	139
Db		78	ACACAGACGUAACCACAUCAGCUUUUGCUGGACACUGUCCGAGAAACAACUCCUGGUC	137
Qy		140	AATGACCTTGCAGAAGCGCATGTACGATACGGCCGTGGAGAATTTAACGCCCGGAC	199
Db		138	AUUGAUCUAGCAAGCGUCGUUUUAGCACACAGCGGUGAAGAGUUUAAACGUCUGUAC	197
Qy		200	CGTAGACCAAGGTCACATTTTCCAAAACATATTAGCGAAGACGACAAACGCTTCTAGTCTCC	259
Db		198	CGCAGGCCAAGGUGAAUUUUUCAAAGUAUAAGCAGGAGACAGCGUUUAUUGCUACC	257
Qy		260	AACCGCTACCCGGATTCAGATTACCTTTTATAATACTCAAAATGCCGTACACAGTTTG	319
Db		258	CGGCGUAUCCAGAAUCCAAAUAUAUUUAUAAACGCAAAAUUGCUGCAUUCGCUU	317
Qy		320	GCTGGAGGTTTGAGAGCAATTAGATTTCGGAATATCTGATGCTACAAGTTCCCTATGGATCG	379
Db		318	GCAGGUGGAUUGCGAUCUUUAGAAUCUGGAUAUUCUGAUGAUGCAAUUCCUACGGAUCA	377
Qy		380	CCGACATATGATATAGCTGGGAACTTTGCAGCACATTTGTTTCAAAGCGAGGATTAGCTG	439
Db		378	UUGACUUAUGACAAGCGGGAUUUUGCAUCGCAUCUGUUAAGGAGCAGACAUUGUA	437
Qy		440	CATTGCTGTATGCCAATCTGGACATACAGAGATATATGAGGACGAGAGCAAAAGAC	499
Db		438	CACUCUGCAUGCCCAACCUGGAGUUCGACACAUC AUGCGCACGAGGCGCAGAAAGAC	497
Qy		500	TCAATTGAGATGATTTTGTCCAGATTGCTCGTTCTAACAGGTAAATTCTGTAGTTCAA	559
Db		498	AGUAUUGAACUAUACCUUUUAGGCUAGAGAGGGGGGAAAAACAGUCCCACAUCCAA	557
Qy		560	AGGAGGCTTTTAAACAGGATATGCAGAGAGCTCCCAACGAAGTCTGCTGCTCTTAAACTTTT	619
Db		558	AAGAAGCAUUGACAGAUACGCAGAAAUUUCUGAAGACGCGUCUGUCAACAUAUCUUC	617
Qy		620	CAGGATTTGCAATACATCCGCCAGAGAAATAGTGTAGAGATACGGTGTGCTCTGCAC	679
Db		618	CAGACAUGCGACAUCAGCCGACGACGACAUACGAGGAGAGUGUAUGCCUACGCGCUACAC	677
Qy		680	AGTTTGTATGATATTTCTGTGCATAGGTTTGGAGCTGCGTTTAAATATCTTAAGAATATACAT	739

Db 1758 UCGGUGUUAAGGAGGUCUGACAAAUUCGAUUGUUGUUAUUUCCAGAUUGCCAAUCU 1817
 Qy 1820 TTAGATGTTAGTCTCTGATGTGGCAGCAGAGTAATCGTTGCGAGTGGCCGAGATAGAAGC 1879
 Db 1818 UUGGAAUGUUGACCAAGACCGCAGGCAAGUUAUAGUCGCGUACAUGACCAUGAGAGC 1877
 Qy 1880 GGTTTAACTCTTACTTTTGTATAGCCAAACCGAGGAAATGTGGCTAAGGCTCT- ----T 1933
 Db 1878 GGUCUGACUCUCAUUAUAGAACACCUACUGAGGCAUUGUUGCGUACGUUAUACAGGAD 1937
 Qy 1934 AAAAGCAGCGCTCTGAGGCGGTGTATGTCTTTGAACACGACATCCGAAGAGGTGAACGTA 1993
 Db 1938 CAAGAGAAGCUUCAGAGGUGUUGUUAUACCUAAGAGAAUUGAAGAACCGUCC 1997
 Qy 1994 AATAAATTTCTATTGCTGAAAGGAGGATTCCTGTGTGTGTCAGAAAGTCTATGTTTG 2053
 Db 1998 AUGAAGGUGUUGGAGGCGCAGAGGAGAGUUAUUAUAGCGUGGUCUGGAGAUCAUCG 2057
 Qy 2054 ACGAATGCTAACTTAGAGCACCGAGGATTTGGAGTTCCTCAACGATTTCCATAGGCTTGC 2113
 Db 2058 GAGUCGUUUAUUAAGAAACGAGGAGUAGAGUUAUAGAGCAGUUAUUAUAGGCAAGC 2117
 Qy 2114 GTGGATAGTGTGATTAACAAAGCAATGGCATCGGTTGTCTACATCGCTCACTCAAGTT 2173
 Db 2118 GCAGAUUGUUAUUCGUAAGCAGAGAGCAGCUCGUAUUGUUAACGCGGUCGUAUAAAGU 2177
 Qy 2174 CAACAAATGAAGAACTATGTGGACAGTTTGGCAGCTTCGTTGTCCGCACTGTATCAAT 2233
 Db 2178 CAGCAAAUAGAAACAUUAUUGAUGCCUGGAGCAUCAUAUCUGCGUGUGUGNAU 2237
 Qy 2234 CTATGCAAGTCACTTAAAGGATGAAGTCCGGTATGATTTCTGATTCAGGGAGAAAGTTGGT 2293
 Db 2238 CUGUCNAAGAUCCUAAAGUAUAGCUGUUAUUGACCUUAGAAACCCGUCNAAGUUGA 2297
 Qy 2294 GTTTGGGATGCTACTTTGAAAAAGTGGCTCCTCAACCTCGCGCCAAAGTCAATCATGG 2353
 Db 2298 GUCUGAUGUUGCAUCUAGGAGGUGUUAUUAUUAACCAACCGGCAAGAGCUGAUGG 2357
 Qy 2354 GAGTGTCTGATTAACAAGGGGAAATGTTTACTGCACTTCTATCTTATGAAGAGAT 2413
 Db 2358 GGUUGUUGUAAACCCAGCGAGAGUAUCAUGUGCGCGUUUUGAAUUAUGAAGAGCAG 2417
 Qy 2414 AGAATGTGCTAGAGCGACTGAGAGGCTGGCTGTATCATCTGATACAATGCTATAT 2473
 Db 2418 GGUUGUGUACUUGCAUGAUGAGGAGAGUAGCUGACUGCUGAGUCUGUUAU 2477
 Qy 2474 TCTGATATGCAAGCTCCTCAAAATCTGAGAAACCAATGAGAGACGGTGAACCCCGAG 2533
 Db 2478 UCCGACAUUGCGAAACUCAGAAUCUCUGCGCAGACUGCUUGGAAACCGAGAACCGCAUG 2537
 Qy 2534 CCTACTGCAAGATGTTGATGTTGGATGGGTGCTGCTGTTGTGGAAGTACAAAGGAT 2593
 Db 2538 AGUAGCCGAAGGUGUUGUUGGAGCGAGUUCGCGGCGUGGAGAAACCAAGAAAU 2597
 Qy 2594 TTTGAAAGATTTGATCTTGTAGAGATTTGATCTTGGTTCTTGGAACCAAGCTGCTGT 2653
 Db 2598 CUUUCAGGGAUUAUUAUGAAGAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 2657
 Qy 2654 ATGATCAGAGAGAGGGTAAATTCATCTGGAAGTGAATAGAGCCCAATGGAATGTGAGA 2713
 Db 2658 AUGAUCAGAGAGACGUGGAAUUCUCAGGGAUUAUUAUUGGCGCAGGAGCAACGUUAAA 2717
 Qy 2714 ACGGTAGATTCACCTTCTAATGCATCCAAACCCGATCAC- ----ACAAAGGCTT 2764
 Db 2718 ACCGUUGAUUUUAUGAUGAAUUUUGGAAAGACACCGCUGUACUUAAGAGGUUA 2777
 Qy 2765 TTTATTGATGAAGGTTGATGCTGCACACCGGTTGTGTTAACTTCTCTGCTTATCTCT 2824
 Db 2778 UUAUUAUGAAGGUGUUGAUGUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 2837
 Qy 2825 GGTTCGACATCGCATATTTACGAGATACACAGCAGATTCCTTTCATTAACAGATT 2884
 Db 2838 UUGUGCGAAAUUGCAUUAUUGUUAUUGGAGACACACAGCAGAGAUUCCAUACAUAUAGAU 2897

Qy 2885 CAGAAATTTCCCGTATCCCAACATTTTGGAGAGCTGCAAGTGAATGAAGTTGAGATAGG 2944
 Db 2898 UCAGAUUCCCGUACCCCGCCCAUUUUGCCAAUUGGAGAGUAGCAGAGGUGAGACACGC 2957
 Qy 2945 AGGACACACACTGAGATGCGCAGGTGATGTGAATTTTTTCTTCAATTCGAAGTACGAAGA 3004
 Db 2958 AGAAUAUCUCUCCGUGUCCAGCCGAGUCACAUUAUCUUAUCUUAUCUUAUCUUAUCU 3017
 Qy 3005 GCGGTGACAAACACTTCAATCTGTACAACGATCGGCTCTATCTGAGATGATAGCGGTAG 3064
 Db 3018 UUGUGAUGAGCACUUCUUGGUUAAAGUUCUGCGAGAGAGUUGCGCGAGCC 3077
 Qy 3065 GCGTACTTAAACAGTGTTCCTAAACCACTTAAAGGGAATTTGTAATTTCTACTCAGGCT 3124
 Db 3078 GCGGUAUACUCCGAUCCUAAACCCUUGCAUGGCAAGUCCUAGCUUAUUAUUAUUAUUA 3137
 Qy 3125 GATAAATTTGAGTTAGAGAGAGGCTTATAGAAATGTGAACACCGTTTCATGAGATCCAA 3184
 Db 3138 GAUAAAGAGCUCUGCUUUAAGAGGUAUUAUCAGAUUGUUCACACUUGUGCAUGAAC 3197
 Qy 3185 GGAGAAACCTTTGAAGATGTGTGCTGTCAGATTGACGGCAACTCCACTGATCTGTATT 3244
 Db 3198 GCGGAGACAUACUCUGAUGUUCACUAGUAGGUUAACCCUACACCGAGUCUCAU 3257
 Qy 3245 TCCAAATCTTCCCGCATGCTCTAGTCTGCTCTAGTACACACACAAAGAGTTCAAATAT 3304
 Db 3258 GAGAGACAGCCCAUUAUUGUUGCAUUGUUAAGCAACACCUUUGCGUCAAGUAC 3317
 Qy 3305 TACACGTAGTGTAGTCTTTAGTACAGATAATAGTGTGATTTGTTCTTTTAAAGTCC 3364
 Db 3318 UACACUGUUGUUAUGAUCUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 3377
 Qy 3365 TTCCTTTTGAATGTATGTAGAACGAGTAGTAGTATAGCAATTAACAGATGATGCA 3424
 Db 3378 UACUUGUUAUGAUGUUAAGUUGCAUGCAGGAAACAAUAGCAUUAUUAUUAUUAUUA 3437
 Qy 3425 GTGTTCAAAAGGTCAATCTCTTTGTGGCAACACCTTAATCAGGAGACTTTTCAGATCTA 3484
 Db 3438 GUGUUAAGGUGUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 3497
 Qy 3485 CAGTTCTATTACGATGTATGCTCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCTGCT 3544
 Db 3498 CAGUUUAUUAUGAUGUUGUUGUUGUUGUUGUUGUUGUUGUUGUUGUUGUUGUUGUUG 3557
 Qy 3545 GTTACCATGAGTTAGTGTATAGTCTTAAATGTGAAGTGTGCTTCTGATTTTCTC 3604
 Db 3558 GUUACCAUGAGGUGUUGCAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 3617
 Qy 3605 AAAAGTATTCCGATGCCAAGAGGTGAACCATGTCTAGAGCCAGTTTGTGCTACCGG 3664
 Db 3618 AGUCUGUUGUUGCGCCUUAAGGAUCAAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 3677
 Qy 3665 GCGGAAACCGCCAGGCTGAGACTCTGCAAAATCTCGTTGCTGCTGCTGCTGCTGCTGCT 3724
 Db 3678 GCAGAAUUGCCAGCCGAGACUGGACUUAUUGGAAAUUAUUAUUAUUAUUAUUAUUA 3737
 Qy 3725 TTTCAACGACACGACTGAGCGGAGATTGATTTGAGAGCAGCCGCTGCTGCTGCTGCT 3784
 Db 3738 UUAACGACCCGAGUUGUUGCAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 3797
 Qy 3785 GATAAGTATTTGATAGCTATTTTATTTAAAAAAGAAAAATACAAAAAATATTTGCTGA 3844
 Db 3798 GAUUAUUUUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 3857
 Qy 3845 GTGATCAGAGGATTTCAATGATGATGCTGTTGGAAAAACAGGAAAGATCTATTGAGC 3904
 Db 3858 UUGUUAUGAUGAGUCUCUCAAUAGUUGUUAAGAAAGCAGGAAACAGGUAACAAUAGGC 3917
 Qy 3905 GACTTCGCTAATCTACAAATTTTACAGATCTGCGGGCATCTGATCAGTACAGACATGATC 3964
 Db 3918 CAGCUCGAGAUUUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 3977

Db 558 AAGGAAAGCAUUGACAGAUACGAGAAAUUCCUGAAGACGCGUGUCUGACAAUACUUC 617
 QY 620 CAGGATTGTCGAATACATCCGCCAGAGAAATAGTGGTAGAGATACGCTGTGCTCGCAC 679
 Db 618 CAGAAUUGCGACAUACAGCGCAUGCAGCAUAUAGGCGAGAGUUAUUGCGCUCAC 677
 QY 680 AGTTTGTATGATATCTCTGTGATGATGTTGGAGCTGCGTTATATCTAAGAAATATACAT 739
 Db 678 AGCAUAUAGCAUACAGCCGAUGAGUUGCGGCGGCACUCUUGAGGAAUUAUUGUCAU 737
 QY 740 GTATGTTATGACAGCTTCCATTTTGGCAGAGCAATATATCTAGACAGCGAGGTTACG 799
 Db 738 ACUGCAUUGCCGCUUUCACUUCUCUGAAGACCCUGCUUUGAUAUUAUUAUUAUUAUUA 797
 QY 800 CTTAATGAAATAGCGCCAACTTTTCAAGAGAGAGTGTATGATGTTCTTTTCTTTGCT 859
 Db 798 UUGGAGCAAAUACACCGGUGUUAUUGCGCGAUGGAGACAAGUUGACCUUUAUUGCA 857
 QY 860 GATGAAAGTACTTTAAATATAGTATCAATAACAAATATCTTGCATTATGATGTTAAA 919
 Db 858 UCAGAGAGUACUUAUUAUUGCAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 917
 QY 920 TCTTATCTTCTGCTTCTAGTAGAATAGTTTAAAGAAATTTTGTACTACTAGGTT 979
 Db 918 ACUUAUUCGCGCCUCUAUUAUAGAGAGUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAU 977
 QY 980 AATACTTGGTGTGTAATTTTACAAAGTAGATACCTATATCTGTACAGAGTGTAGA 1039
 Db 978 AAUACCGUGUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAU 1037
 QY 1040 CAATAGTGGTGTGATAGTATGATGATGATGATGATGATGATGATGATGATGATGATGAT 1099
 Db 1038 CAUAAAGUGUAUAGAGAGAGUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 1097
 QY 1100 AAAACCTTGCCATGTTTCAACTGAAAGAGCAATCTTTAGAGACAGCGCTTCGGTTAAC 1159
 Db 1098 AAGACUUAUGUAGUGCAACAGCGAGAGAAUUCUUGAGUUAUUAUUAUUAUUAUUAUUA 1157
 QY 1160 TTTTGGTTCCTAAGATGAAGGACATGTTGATAGTACCGCTGTTTGGAGGTTCTATTACC 1219
 Db 1158 UACUGUUUCCAAAUGAGGGAUUAUGUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 1217
 QY 1220 AGCAAAAGATGACAAAGGATGAGGTCAATGTTTAAATCGTGACTTCGTTTACACAGTCTT 1279
 Db 1218 ACUAGUAGAGGACGCGAAGGAAGUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAU 1277
 QY 1280 AATCATATCAGACATATCAGCCAAAGCTTAACTTACAGAACGTTATTTCTTCGTG 1339
 Db 1278 AACCACAUUCGAAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 1337
 QY 1340 GAGTCTATAGATCCCGCGTGAATCAATGTTGTTACTGCTAGGTCTGAATGGGATGTA 1399
 Db 1338 GAUUGAUUCGAGGAGGUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 1397
 QY 1400 GATAAAGCAATCTTCAACCTTGTCAATGACTTTCTTCTTGAGACTAAGCTGGCTGGC 1459
 Db 1398 GACAAAUUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 1457
 QY 1460 CTTCAAGACATATAGTAATGGAAAGTTTCGGTGTGTTGATGAAGACCTTCTGAACTT 1519
 Db 1458 CUAAAGGAUACUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 1517
 QY 1520 ATTTGGATGAGTGGGCAATTTTGGAAAGCTTTTCCCACTACTCAAGAGAGATTG 1579
 Db 1518 GUGUGGAUAGAUUUCGUGGUUUGGAAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAU 1577
 QY 1580 GTGAGCAGGAAATCTTGGATGTAAGTGAATGCTTCTGAAGATCAAGATCCAGATCTG 1639
 Db 1578 UUGAAACAGGAAACUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 1637
 QY 1640 TATGTACATGGAAGACAGGTTCTGATGTAATACCAAGTCTGAGGAGTTACCGCAT 1699
 Db 1638 UAUGUGACCUUCCACGAAUUAUGACAGAAAGGCGGCGGCGGCGGCGGCGGCGGCGGCGG 1697

QY 1700 CTAGATATCAAGAGGACTTAGAAGAGCTGAGCAAAATGTAGACGCGTTTATCAGAAATTA 1759
 Db 1698 CUUGACAUUAGAAAGAGAGGAGAAAGAGGAGUAGUACAAGUACAUUUCAGAGUUA 1757
 QY 1760 TCTATCTTTAAGGGTCTGATATTTTCGATATCGGAAAGTTTCAAGACATGTGCAAGGCT 1819
 Db 1758 UCGGUGUUAAGGAGUGACAAAUUCGAUUGUUAUUGUUAUUGUUAUUGUUAUUGUUAUUG 1817
 QY 1820 TTAGATGTTAGTCTGCTGAGCAGCAGAGTAATCTGTTGACGTGGCCGAGATAGAGC 1879
 Db 1818 UUGGAAGUUGACCCAAUAGACGCGCAGGAGUUAUAGUCGCGGCUAUGACCAUAGAGC 1877
 QY 1880 GGTTTAACTCTTACTTTTGTATAGCAACCCAGGAGAAATGTGCTTAAGGCTCT-----T 1933
 Db 1878 GGUUGACUCUCAUUAUAGACCAUUAUAGAGGAGUUAUUGGCGUAGCUUUAUAGAGAU 1937
 QY 1934 AAAAGCAGCGCTCTGAGGCGCTGTATGTCTTGAACCGACATCTCGAAGAGGTGAACGTA 1993
 Db 1938 CAAGAGAGGCUUCAGAGGUGCUUUGUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 1997
 QY 1994 AATAAATTTTCTTATGCTGAGAAAGGAGATTTGCTGTGCTGTCAGAAAGTCTGTTTG 2053
 Db 1998 AUGAAGGUGUAGUAGCGCAGAGAGUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAU 2057
 QY 2054 ACGAATGCTTAACTTAGAGCACCAGAGTGTGAGTCCCTCAACGATTTTCCATAGGCTTGC 2113
 Db 2058 GAGUGCUUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAU 2117
 QY 2114 GTGGATGATGATTAACAAGCAAAATGGCATCGGTTGTCTACACTGGCTCACTCAAGTT 2173
 Db 2118 CGAGAUUCGUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAU 2177
 QY 2174 CAAACAAAGCAATCTGTGACAGTGTGGGAGCTTCTGTTGCTGCGCACTGTATCAAT 2233
 Db 2178 CAGCAAAUAGAAACCUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 2237
 QY 2234 CTATGCAAGTCACTAAGGATGAAGTCCGGTGTATGATTTCTGATTTCCAGGAGAAAGTTGGT 2293
 Db 2238 CUCGUCAAGAUCCUCAAAGAUACAGCUGCUUAUUAUUAUUAUUAUUAUUAUUAUUA 2297
 QY 2294 GTTTGGGATGTCATCTTTGAAAGAGTGGCTCTCAAACTGCGGCGCAAGGTCTATTCATGG 2353
 Db 2298 GUCUUGAUGUUGCAUCUAGAGAGUGUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 2357
 QY 2354 GGAGTTGCTCTGATTTACAAAGGGGAAATGTTTACTGCACTTCTATCTTTATGAGGAT 2413
 Db 2358 GGUUGUUGUUAACCCACCGAGGAGUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 2417
 QY 2414 AGAATGCTGACTGACGAGCGACTGGAGGAGGCTGTATCATCTGATACAAATGGTATAT 2473
 Db 2418 GGUUGUGUAGAUUGCAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAU 2477
 QY 2474 TCTGATTTGCAAGCTCCAAATCTGAGAAACAAATGAGAGACGCTGAACCCACAGAA 2533
 Db 2478 UCCGACAGUGCGGAAACUCAGAACUCUGCGCAGACUCUGUUAUUAUUAUUAUUAU 2537
 QY 2534 CTTACTGCAAGATGCTACTTGTGATGCGGCTGCTGTTGTTGTTGTTGTTGTTGTTGTT 2593
 Db 2538 AGUAGCGAAAGUUGUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 2597
 QY 2594 TTTGAAAGATTTGATCTTGTGAGGATTTGATCTTGGTTCTTGGTCTTGGTCTTGGTCT 2653
 Db 2598 CUUUCAGGUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAU 2657
 QY 2654 ATGATCAGAAAGAGGCTTAATCTGCTGATGAAGAGCCCAATGACATGTCATGTCAGA 2713
 Db 2658 AUGAUCAGAGAGCGUGCGAAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAU 2717
 QY 2714 ACGGTAGATTCACTTCTAATGAT-----CCAAAACCGCGATCACACAAAGAGGCTT 2764
 Db 2718 ACCGUUGAUUUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAU 2777

Db 4935 CAUAGAGUUUACGACCCUGACAAAUAUGGAGAGAUUUAUCCGUGAUUUUACCCUGU 4994
 QY 4982 CAAGAGTGTAGAAATATCGACTGTGGACAGATTATGGCTGTTAAGAAATAGTCTTTC 5041
 Db 4995 AAAGAGUUUAGUGUUUCCAAAGUGUGAUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 5054
 QY 5042 TGATGTAGATTTACTTTAAAGGTGTAAAGTGTAGTGTAGTGTAGTGTAGTGTAGTGTAG 5101
 Db 5055 AGAGGUAACCUUUAUUAAGAGUUUAAGCUUUAUUAUUAUUAUUAUUAUUAUUAUUA 5114
 QY 5102 TTTGGTAGTGTCTGGGAGTGGAAATCTCCGGATAATCTCGGTGTTGTTGTTGTTGTTG 5161
 Db 5115 UUGUGUGUACACGGGAGUGGAUUGUGUGAUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 5174
 QY 5162 TATTGTAGATAAGAGATGAAGAGGAGTAAAGGAGCAACGCTGGTGGTATCAGCCGCC 5221
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 QY 5222 TGCTGCAAAAAGAAATTTCTTTTAAGCTAAATCCCTAATTATTCAATACATCCGAGGA 5281
 Db 5235 AGUCGCAAGAAAGAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 5294
 QY 5282 TGCTGAGAACACCCGTTGGCAAGTGTAGTGAATATCAAGAGTGGCTATGGAAGAAG 5341
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 QY 5342 ATACTGCTTTATCTTTTGAGTTCGTTTCAATTTGTGTAGTACATAAAATTAATTAAG 5401
 Db 5355 UUCUGUGCCUUCUCUGAGUUUGUGCGUGUGUUUUUAUUAUUAUUAUUAUUAUUAUUA 5414
 QY 5402 AAAAGGTTTGAGGAACGTAATTTTGAGTGTGACAGACGGCTCGCCCAATTGAATCTACTGA 5461
 Db 5415 AUUAGUUUAGAGAGAGAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 5474
 QY 5462 AAAGGTTGTGAGGAGTCTGGATGAAGTACCAATGCTGTGAAACTCGAAAGGTTTC- 5520
 Db 5475 AGAAGUGUUGAGUGAUCAUGGAAGUCCCUAUGUGCAUGGCUUGCAAGGUUUG 5534
 QY 5521 -----CGAAAAACAAAAGAAATGTTAGTGTAGTGAATTAATGTTAAAT- 5561
 Db 5535 AUCUGAACCGGAAAAAGAGUGAUGCCCAAGGGAUUAUUAUUAUUAUUAUUAUUAUUA 5594
 QY 5562 -----AAGAAATAATAACAGTGTGAAGAGGGTTTTTAAATTTGAGGAATTCAGGA 5614
 Db 5595 AGUGCCGCAACAGAAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 5654
 QY 5615 TAATGTAAGTGTAGCAGAGT-----CTATCGCGTATCGAGTACGTTTAAATCAAT 5665
 Db 5655 UAAUUUAAUUGAUGAUGAUGGAGGCUACUGUGCGCAUUAUUAUUAUUAUUAUUAUUA 5711
 QY 5666 ATGCTTTATACATCAATCTCCGAGCCATTTGTTTACTTATCTTCGCTTACGAGAT 5725
 Db 5712 AUGUCUUAAGUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 5771
 QY 5726 CTTGTGAGCTGATCAATCTGTACAAATGCTATGGTGAACCACTTCAACGCAACAA 5785
 Db 5772 CCAUAGAGUUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 5831
 QY 5786 GTTAGGACAACTGTCAACAGCAATTTGCGATGCTCGGAAACCTGTGCTAGTAGACA 5845
 Db 5832 GCUCGAACUUCUGUUAAGAACAAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 5891
 QY 5846 GTGAGATTTCTCATCGAT-----TTCTATGTG 5875
 Db 5892 GUUAGGUUCCUGGAGCGAUGGCGUGUGAACGUGAGGAGACAGAGACUUAUUAUUA 5951
 QY 5876 TATAGATATAATTCGAGCTTTGATCGGTTGATCAGCGGCTTATTAATAGCTTTGATACT 5935
 Db 5952 UACAGGUACAAGCGGUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 6011
 QY 5936 AGAAATAGAAATATAGAGTTGTATATCAACCCGACCGAAATCTACTGAAATCGTTTAC 5995
 Db 6012 AGAAUAGAAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 6071

QY 5996 GCGACTCAGAGGTAGACGATCTACTGTAGCTATAAGGGCTTCAATCAATATTTGGCT 6055
 Db 6072 GCUACUCGAGAGAGACGACGCAACGCGCAUAAAGAGCGCGAAUAAUUAUUA 6131
 QY 6056 AATGAATCGTTTCTGTTGAATCGCATGTTCAATCAAGCAGGCTTTGAGACTGCTAGTGA 6115
 Db 6132 GUAGAAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 6191
 QY 6116 CTTGTCTGACCAACCACTCCGGCTACTTAGCTATTGTTGTGAGATTCTCTAAATAAGT 6175
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 QY 6236 TTAATATATAACGATTGTCTATCTGATCCAAACAGTTAAACCATGTGTGTATCTG 6295
 Db 6307 UUAUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 6365
 QY 6296 TGTATGCGGTAAACATCGGAGAGTTCGAATCTCTCTAAACCGCGGTAGCGGCCA 6355
 Db 6366 CCGCAGGCAAGUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUAUUA 6425
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 ; GENERAL INFORMATION:
 ; APPLICANT: Large Scale Biology
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 ; TITLE OF INVENTION: MULTIMERIC PROTEIN ENGINEERING
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 ; CURRENT APPLICATION NUMBER: US/10/679,620
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 ; PRIOR FILING DATE: 2002-10-03
 ; NUMBER OF SEQ ID NOS: 122
 ; SOFTWARE: PatentIn version 3.2
 ; SEQ ID NO 73
 ; LENGTH: 11222
 ; TYPE: DNA
 ; ORGANISM: Artificial Sequence
 ; FEATURE:
 ; OTHER INFORMATION: pLSBC1741 , see Example 13
 US-10-679-620-73

Query Match 36.1%; Score 2291.4; DB 17; Length 11222;
 Best Local Similarity 64.0%; Pred. No. 0;
 Matches 3532; Conservative 0; Mismatches 1966; Indels 21; Gaps 4;
 QY 20 ACACAAACAATTAACAAACAAACAAACATATTACAAACAAACAAACAAACAAACAAAC 79
 Db 18 ACCACACACAAACAAACAAACAAACATTTACTATTACTATTACTATTACTATTACTATT 77
 QY 80 ATACATCTTATTAATTAGCAACCCCTTCTTTGAAAGCGTGGTGTAAACAACTCTCGTT 139
 Db 78 ACACAGACAGCTACCAACATCAGCTTGTCTGGACATGTCCGAGGAAACAACTCTTGGTC 137
 QY 140 AATGACCTTGCAGAGGCGCATGTACGATACGCGGTGGAGAAATTTAAACCCCGCAC 199
 Db 138 AATGATCTAGAAAGCGCTCTTTACGACACAGCGGTTTGAAGAGTTTAAACGCTCGTGAC 197
 QY 200 CGTAGACCAAGGTCAACTTTTCCAAACATTTAGCGAAGAGCAACCGCTTCTAGTCTCC 259
 Db 198 CGCAGGCCCAAGGTGNACTTTTCAAAAGTAATAAGCGAGGACGACGCTTATTGTACTAC 257
 QY 260 AACCGGTACCCGAGTTCAGATTACCTTTTATATATCTCAAAATGCGCGTACACAGTTTG 319
 Db 258 CGGGCGTATCCAGAAATTCCAAATTTAATTTTATTAACACGCAAAATGCGCGTATCGCTT 317

Qy	320	GCTGGAGGTTTGAGAGCAATTGAAATTCGGAATATCTGATGCTTAAAGTTCCCTATGGATCG	379
Db	318	GCAGGTGGATTTGCCGATCTTTAGAACTCGGAATATCTGATGATGCAAAATTCCTCTACGGATCA	377
Qy	380	CCGACATATGATATAGTTGGGAACTTTTGACGACACATTTGTTTCAAGGCGAGGATTTACGTG	439
Db	378	TTGACTTATGACATAGGCGGGAATTTTGATCGCATCTGTTTCAAGGACGAGCANTATGTA	437
Qy	440	CATTGCTGTATGCCCAATCTGGACATACGAGATATAATGAGGCAACGAGGACAAAAGGAC	499
Db	438	CACCTGCTGATGCCCAACCTGGAGCTTCGAGACATCATGGGCAACGAAAGCCAGAAAGAC	497
Qy	500	TCAAATTCAGATGTAATTTGTTCCAGATTGTTCTCGTTTCTAAACAGGTAATTTCTGAGTTTCAA	559
Db	498	AGTATTGAACATATATACCTTTCTAGGCTTAGAGAGAGGGGGAATAACAGTCCCAACATCCAA	557
Qy	560	AGGAGGCGCTTTAAACAGTATGCAAGAAGCTCCCAACGAAGTCTCCTGCTCTTAAACATTTTT	619
Db	558	AAGGAAGATTTGACAGATACGACAGAAATTCCTGAGACGCTGCTGTCAATATCTTTC	617
Qy	620	CAGGATTTGTCGAATATCATCCGCCAGAGAATAGTGGTAGAAGATACGCTGTGCTCTGCAC	679
Db	618	CAGACAAATCGACATCAGCCGATCAGCAATCAGGCGAGGTGATGCCATTGGGCTACAC	677
Qy	680	AGTTTGTATGATATTTCCGTGTCATGAGTTTGGAGCTCGGTTAATATCTAAGAATATACAT	739
Db	678	AGCATATATGACATACCAAGCCGATGAGTTGGGGCGCACCTTTGAGGAAAAATGTCCAT	737
Qy	740	GTATGTTATGCAGCTTCCATTTTGGCAGAAGCATTTATCTAGACACAGCGAGGTTACG	799
Db	738	ACGTGCTATGCCGCTTTCCACTTCTCTGAGNACCTGCTTCTTGAGATTTCATCGTCAAT	797
Qy	800	CTTAATGAATATGCGGCAACTTTCAAAGAGAAGGTGATGATGTTTCTTTTTCTTTGCT	859
Db	798	TTGACGAAATCAACGGCGTGTTTTTTCGCGCATGGAGACAAGTTGACCTTTCTTTTGCA	857
Qy	860	GATCAAAAGTACTTTAAATATTAGTCATAATACAAAATATCTTGCATTTATGATTTAAA	919
Db	858	TCAGAGAGTACTCTTAATATTGTCATAGTTATTTCTAATATCTTAAAGTATGTGCAAA	917
Qy	920	TCTTTACTTTCTCGTCTCTAGTAGAATATAGTTTACTTTTAAGGAAATTTTTPAGTCAC	979
Db	918	ACTTTACTTTCCGGCCTCTATAGAGAGGTTTACATGAAGGATTTTTAGTCAACAGATT	977
Qy	980	AATACTTGGTTTGTGTAATTTTACAAAGTAGATACCTATATCTGHTACAAGAGTGTAGA	1039
Db	978	AATACTCGTTTGTGTAAGTTTCTCAGAAATAGATACTTTTCTTTTGTACAAAGGTGGCC	1037
Qy	1040	CAAGTAGGTTGTGATGATGATCAGTTCTATGAGGCGATGGAAGACGCTTTGCTTTACAAG	1099
Db	1038	CATAAAAGTGTAGATGTAGACGTTTATCTGCAATGGAAGACGATGGCATATACAA	1097
Qy	1100	AAAAACCTTTGGCCATGTTTCAACACTTGAAGAGCAATCTTTTAGACACAGGCTTCGGTTAAC	1159
Db	1098	AAGACTCTTGCAATGTCAACAGCGAGAGAACTCTCTCTTGAGGATTCATCATCAGTCAAT	1157
Qy	1160	TTTTTGGTTTCCCTAAGATGAAGGACATGGTGATAGTACCGCTGTTTGAAGGTTTCTATPACC	1219
Db	1158	TACTGTTTTCCTCAAAATAGGAGATATGGTTCATCGTAGCATTTATTCGACATTTCTTTGGAG	1217
Qy	1220	AGCAAAAAGATGACAAGGAGTGAGGTCATTTGTTAATCGTGACTTTCGTTTACACAGTCTTT	1279
Db	1218	ACTAGTAGAGGACCGCAAGGAAGTCTTAGTGTCCAAGGATTTTCGTGTTTACHGTGCTT	1277
Qy	1280	AATCATATCAGAAATATCAAGCCAAAGCGTTAACTTTACCAGAACGTAATTTATCTTCCGTG	1339
Db	1278	AAACCACATTCGAACATACCAGCGGAAAGCTCTTACATACGCAAAATGTTTGTCTCTTTGTC	1337
Qy	1340	GAGTCTATAGATCCCGGTGATTAATCAATGGTGTTTACTGCTAGGTCTGAATGGGATGTA	1399
Db	1338	GAATTCGATTCGATCGAGGGTAATCATTTAACGGTGTGACAGCGAGGTCGGAATGGGATGTG	1397

QY	1400	GATAAAGCAATCTTTCAAACCCCTTGTCTCAATGACATTTCTTCTTGACAGACTTAAGCTGGCTGGC	1459
DB	1398	GACAAATCTTTTGTGTACAAATCTTTGTCCATGACCTTTTACCTGTCAATTAAGCTTGCCTGT	1457
QY	1460	CTTCAAGACGATATAGTAATTTGGGAAAGTTTTCGGTGTCTGGATAAGACCACCTTCTCTGAACCT	1519
DB	1458	CTAAAGAGTGACTTATCTGATTAGCAAGTTTAGTCTCGTTCGGTTCGAAACCGGTGTGCCAGCAT	1517
QY	1520	ATTTGGGATGAGGTGGGCAAAATTTTTTTGGAAACGTTTTTCCCACTACTCAAAGAGAGATTG	1579
DB	1518	GTGTGGGATGAGATTTTCGCTGGCGTTTGGAGCGCATTTCCCTCCGTGAAAGAGAGAGCGCTC	1577
QY	1580	GTGAGCAGGAAAATTTCTGGATGTAAAGTGAGATGCTCTCTGAAGATCAAGATCCAGATCTG	1639
DB	1578	TTGAACAGGAAACTTATCAGAGTGGCAGCGACGCATTTAGAGATCAGGGTGCCTGATCTA	1637
QY	1640	TATGTCACATGGAAAGACAGGTTTCGTAGCTGTAATACACCAAGTCTGAGGAGTTACCGCAT	1699
DB	1638	TATGTGACCTTCCACGACAGTTTAGTGACTGAGTACAAGGCCCTCTGTGGACATGCTCTGGC	1697
QY	1700	CTAGATATCAAGAAGGACTTTAGAAAGAGCTTGACAAATGTACGACGCGTTTATCAGAAATTA	1759
DB	1698	CTTGACATTAGGAAGAAGATGGAAGAAACGGAAGTGTGTACAATGCATCTTTCAGAGTTA	1757
QY	1760	TCTATCTTAAAGGTGCTGATAATTTTCGATATCCGGAAGTTTCAAAGACATGTGCAAGGCT	1819
DB	1758	TCGGTGTAAAGGGAGTCTGACAAATTCGATGTGTGATGTTTTTTTCCAGATGTGCCAATCT	1817
QY	1820	TTAGATGTTAGTCTGTAGTGGCAGCAGAGTAATCGTTGCAGTGGCCGAGAAATAGAAC	1879
DB	1818	TTGGAAGTGTACCCAAATGACCGCAGCGAAGGTTTATAGTCGCGGTCTATGACAAATGAGAGC	1877
QY	1880	GGTTTAACCTCTACTTTTGTATAAGCCAAACGAGGAGAAATGTGGCTAAAGGCTCT-----T	1933
DB	1878	GGTCTGACTCTCATAATTTGAACGACCTACTGAGGCGAATGTTTGGCGTAGCTTTTACAGGAT	1937
QY	1934	AAAAGCAGCGGCTCTGAGGCCGTGTGATGTTTGAACCGACATPCGAAAGGTGGAACGTA	1993
DB	1938	CNAGAGAAGGCTTCAGAAAGGTCTTTGGTAGTTTACCTCAAGAGAAGTTCAAGAAACCGTCC	1997
QY	1994	AATAAATTTCTATTCTCTGAGAAAGGAGNATTCCTCTGTGTGTGCGAAGAGTCATGGTTTG	2053
DB	1998	ATGAAGGGTTCGATGGCCAGAGAGAGTTACAATTAGCTGGTCTGCTGGAGATCATCCG	2057
QY	2054	ACGAATGCTAACTTAGAGCACAGGAGTTGGAGTCCCTCAAACGATTTCAATAAGGCTTGC	2113
DB	2058	GAGTCGCTCTATTCTTAAGAACGAGGAGATAGAGTCTTTAGAGCAGTTTCAATGCGCAACG	2117
QY	2114	GTGGATAGTGTGATTACAAAGCAAAATGGCATCGGTTGTCTACATCGGCTCACTCAAAGTT	2173
DB	2118	GCAGATTCGTTAATTCGTAAAGCAGATGAGCTCGATTTGTGTACACGGGTCCGATTAAGTT	2177
QY	2174	CAACAAATGAAGAACTATGTGGACAGTTTGGCAGCTTGGTTGTCGCCCACTGTATCAAAAT	2233
DB	2178	CAGCAAAATGAAAACCTTTATTCGATAGCCTGGTAGCATCACTATCTCTCGCGGTGTCGAAT	2237
QY	2234	CTATGCAAGTCACATAAAGGATGAAGTCGGGTATGATTTCTGATTCAGGAGGAAAGTTGGT	2293
DB	2238	CTCGTCAAGATCTCAAAAGATACAGCTGCTATTGACCTTGAACCCCGTCAAAAGTTTGA	2297
QY	2294	GTTTGGGATGTCACTTTGAAAAAGTGGCTCTCTCAAAACCTGCGGCCAAAGGTCAATCATGG	2353
DB	2298	GTCTTGGATGTGCACTCTAGGAAGTGGTTAATCAAAACCAAGCGCCAAAGAGTCATGCATGG	2357
QY	2354	GGAGTTGCTCGATTACAAGGGGAAAAATGTTTACTGCACTTCTTATCTTATGAAGAGAT	2413
DB	2358	GGTGTGTTGAAAACCCCAACGCGAGAGAGTATCATGTGTGGCGCTTTTGGAAATATGATGACAG	2417
QY	2414	AGAAATGTGACTGAGAGCGACTCGAGAGGGTGGCTGTATCATCTGATACAAATGGGTATAT	2473
DB	2418	GGTGTGTTGACATGCGATGATTTGGAGAAGTAGTACTGTGAGCTCTGAGTCTGTTGTTTAT	2477
QY	2474	TCTGATATTCGAAAGCTTCCAAAATCTTGAGGAAAACAAATGAGAGACGGTGAACCCCAACGAA	2533

2478 TCCGACATGCGGAACTCAGAACTCTGCGCAGACTGCTTCGAAACGAGAACCGCATGTC 2537
 2534 CTTACTGCAAGATGTAATTGTTGGATGGGTGCTGTTGGAAAGTACAAAGAGAT 2593
 2538 AGTAGCGCAAGGTTGTTCTTGTGGACGGAGTTCGGGCTGTGGGAAACCAAGAAAT 2597
 2594 TTTGAAAGATTTGATCTTGATGAGGATTTGATCTTGTTCCCTGGAAACCAAGCTCTGCT 2653
 2598 CTTTCCAGGTTAAATTTGATGAAGATCTAAATTTTAGTACCTGGGAAGCAAGCCGGAA 2657
 2654 ATGATCAGAAAGGCGTAAATTCATCTGCACTGATGAAGGACACAAATGACATGTGAGA 2713
 2658 ATGATCAGAAAGCGTGCATCTCTCAGGATTTATTTGTGGCCACGAAAGCAACGTTAA 2717
 2714 ACGGTAGATTCACCTCTATGATGAT-----CCAAACCGCGATCACACAAGAGGCTT 2764
 2718 ACCGTGATTTCTTCAATGATGAAATTTGGAAAGCACACGCTGTCTAGTTCAAGAGTTA 2777
 2765 TTTATTGATGAAGGTTGATGCTGCAACCGGTTGTTAACTTCCTGTGCTTATCTCT 2824
 2778 TTCATTGATGAAGGTTGATGTTGATCTACTGTTGTTAAATTTCTGTGGCGATGTCA 2837
 2825 GGTTCGACATCGATACATTTACGGGATACACAGCAGATTCCTTCAATTAACAGATT 2884
 2838 TTGTGCGAAATGCATATGTTTACGGAGACACACAGCAGATTCATACATCAATGAGTT 2897
 2885 CAGAAATTCCTGATCCCAACATTTTGAAAGCTGCAAGTGTGATGAAGTTGAGTGAGG 2944
 2898 TCAGGATTCCTGATCCCGCCCATTTTGCCAAATTTGGAAGTTGACGAGTTGAGACACG 2957
 2945 AGGACCACTGATGATGCCAGGTGATGTAATTTTTCCTAACAATGAAGTACGAGGA 3004
 2958 AGAACTACTCTCCGTTGTCAGCGATGTACACATTTATCTGAACAGGATATGAGGCG 3017
 3005 GCGGTGACACCACTTCACTGATACAGATCGTCTCATCTGAGATGATAGCGGTAAG 3064
 3018 TTTGTGATGAGCATCTTCGGTTAAAGTCTGTTTCGACAGAGATGTTGCGGAGGCC 3077
 3065 GGAGTACTAAACAGTGTTCCAACCACTAAAGGGGAAATTTGAACTTTCATCTAGGCT 3124
 3078 GCCGTGATCAATCCGATCTCAAAACCTTTCGATGCGCAAGATCTCTGACTTTTACCCCAATCG 3137
 3125 GATAAATTTGATTTAGGAGAGGCGTATAAGATGTGAACCGTTTCATGATGATCCAA 3184
 3138 GATAAAGAAGCTCTGCTTTCAGAGGATTTTCAGATGTTTCACATGTCGATGAAGTGCAA 3197
 3185 GGAGAACTTTGAAGATGTGCTGCTGATGATGACGGCAACTCCACTGACTCTGAT 3244
 3198 GCGGAGACATCTCTGATGTTTCACTAGTTAGTTTAACTCCCTACACAGTCTCCATCAT 3257
 3245 TCCAAGTCTTCCCGCATGTTTCTAGTCGCTCTGACTAGACACACAAAGAGGTTCAAAAT 3304
 3258 GCAGGAGACAGCCACATGTTTGTGCGCATTTGCAAGGACACACTGTCGCTCAAGTAC 3317
 3305 TACACCGTAGTTAGATCTTTTGTAGTACAGATATTTAGTATTTGTTCTTTTAAAGTCC 3364
 3318 TACACTGTTGTTAGTATGATCTTTTGTAGTATCAATAGATCTAGAGAACTTAGTCTCG 3377
 3365 TTCTCTTTTGAAGATGATATGTTAGAGCAGGTAGTAGACAAATTTACAGATGATGCA 3424
 3378 TACTTGTAGATATGATAAGTTCGATGCGATGCAAGAACACAAATAGCAATTTACAGATTGACTCG 3437
 3425 GTGTTCAAGGTCATATCTCTTTGTGGCAACACCTAAATCAGGAGCTTTCAGATCTA 3484
 3438 GTGTTCAAGGTTCCAAATCTTTTGTGCGCGCAAGACTGTTGATATTTCTGATG 3497
 3485 CAGTTCTATTACGATGATGCTCCCTGTAATAGTACTATTAACAAGTATGATGCT 3544
 3498 CAGTTTCTACTATGATAAGTCTCCAGGCAACGACCATGATGATTAATTTTGTGCT 3557
 3545 GTTACCATTGAGTTACGTTGATAATAGTCTTAATGTGAAGGATTTGTTGTTGATTTTCC 3604

3558 GTTACCATTGAGTTGACTGACATTTTCATTGAATGTCAAAGATTGTCATATTTGGATATGCT 3617
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 3618 AAGTCTGTTGCTGGCCTAAGGATCAAAATCAAACTAATACCTATGGTACGAAACCGCG 3677
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 3678 GCAGAAATGCCACGCCAGACTGGACTATTTGGAAATTTAGTGGCGATGATTAAGGAAC 3737
 3725 TTCAACGCCACAGACCTGACGCGGACGATTCAGATTCAGAGCACCGCATCTGTTGTAGTA 3784
 3738 TTTAACGCCACCGAGTTGCTGCGCATCATTTGATTTGAAATATCTGCTATCTTTAGTTGTA 3797
 3785 GATAAGTTTTTTGATGATGCTATTTTAAAGAAAGAAATACACAAAGAAATTTGCTGGA 3844
 3798 GATAAGTTTTTTGATGATGCTATTTTAAAGAAAGAAAGAAACCAATTAAGAAATTTTCT 3857
 3845 GTGATGACGAAGGATTCATCATGATGATGTTGCAAAACAGGAAAGAGTACTATTGGAC 3904
 3858 TTGTTAGTACGAGATCTCTCAATAGATGTTTGAAGACGAGGAACAGGTAACAATAGGC 3917
 3905 GACTTGGCTAACTACAATTTTACAGATCTGCGGCGCATTCGATTCAGTACAGACCATGATC 3964
 3918 CAGCTCGCAGATTTGATTTGTTAGATTTGCCAGCAGTTGATTCAGTACAGACCATGAT 3977
 3965 AAGGCTCAACCAACAGAAATTTGACCTTTCAATTCAGAAATGAATACCTGCTCTGCAA 4024
 3978 AAGACACAAACCAAGCAAAATTTGACACTTCAATTCCAACGAGGATCCCGCTTTGCG 4037
 4025 ACAATTTGCTACCATTCGAAGCAGATCAACGCTATTTTGGCCGGTTCT---CAGAGCTT 4081
 4038 AGCATTTGTTACCATTTCAAAAGATCAATGCAATATTTGGCCCGTTGTTAGTGAGCTT 4097
 4082 ACAAGTTGCTGCTCGAGCATTTGATTTCTAAGAGTTTCTTTCTTTACTAGGAAACT 4141
 4098 ACTAGGCAATTTACTCGACAGTGTGATTTGATTCGACAGATTTTGTGTTTTCACAGAAAGACA 4157
 4142 CCAGAACAGATTTCAAGAAATTTTTCGGATCTCGACTCGCAGTTCCTATGATGATGTTA 4201
 4158 CAGCGCAGATTTGAGATTTCTTCGGAGATCTTCGACAGTCACTGTCGCGATGATGCTTG 4217
 4202 GAACCTGGATTTTCTAAGTATGATTAAGTCAAGAACGAGTTTTCATGTTGCTGTAGATAT 4261
 4218 GAGCTGGATATCAAAATACGACAAATCTCAGAAATGAATTCACCTGTCGATAGATAC 4277
 4262 GAAATATGAAAGATTTGGTCTCAATGATTTTGGCCGAGTGTGAAACCAAGGCAAC 4321
 4278 GAGATCTGGCGAAGATTTGGGTTTGAAGACTTCTTTGGGAGAAAGTTTGGAAACCAAGGCAT 4337
 4322 AGGAAACCAACTTTGAAGGATTTACATTTGCTGGAATCAAGACATGCTGTGTTATCAAGG 4381
 4338 AGAAGACCACTCTCAGGATTTACCGCAGGTATATAAACTTGCATCTGGTATCAAGA 4397
 4382 AAAAGCGGTGATGATGATCTTTTCATCGGCAATATCTGTTATTAATAGCAGCTTGTGGGT 4441
 4398 AAGAGCGGAGCTCACGACGTTTCAATTGGAACACATGTCATCTGTCATGTTTGGCC 4457
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 4458 TCGATCTTCGATGGAAGAAATTAATCAAGGAGCCTTTTGGTGACGATGCTGCTG 4517
 4502 TATTTTCCAAAGGTTTGGATTTCCCTGACATTCAGTCAATGCTGCTAATCTCATGTTGGAAT 4561
 4518 TACTTTCCAAAGGTTTGTGATTTCCGGATGTGCAACACTCCGCGAATCTTATGTGGAAT 4577
 4562 TTTGAGGCCAACTGATAGAAAGGATACGTTTACTTTTGTGGTGGATAGATCATATACAC 4621
 4578 TTTGAAGCAAACTGTTTAAAGAAACAGTATGGATCTTTTTCGGAAGATATGTAATACAT 4637
 4622 CATGATAAGGCAATAGTATGATTTATGATCTCTTTGAAAGTTGATCTTCAAACTTGGGCA 4681
 4638 CACGACAGGATGCTATTTGATTTACGATCCCTTAAAGTTGATCTCGAACTTGGTCT 4697

Db	1578	TTGAACAGGAAACTTATACAGAGTGGCAGGCGACCAATTAGAGATCAGGGTGCCTGATCTA	1637
Qy	1640	TATGTCACATCGAAAGACAGGTTTCGTAGCTGAATACACCAAGTCTGAGGAGTTACCGCAT	1699
Db	1638	TATGTGACCTTCCACGACAGATTAGTGNACTGAGTACAAAGGCCCTCTGTGGACATGCTTGGC	1697
Qy	1700	CTGATATACAAAGAGACTTATAGAAAGAGCTGAGCAAAATGTACGACGCTTATCAGAAATTA	1759
Db	1698	CTTGACATTAGGAAAGAGATGGAAGAAACGGAAGTGATGTACAAATGCATCTTTCAGAGTTA	1757
Qy	1760	TCTATCCTTAAGGTCGTGATTAATTTCCGATATCCGGAAGTTCAAGACATGTGCAAGGCT	1819
Db	1758	TCGGTGTTAAGGGAGTCTGACAAATTCGATGTTCATGTTTTCCTCCAGATGTGCCAATCT	1817
Qy	1820	TTAGATGTATGTCCTGATGTGGCAGCACGAGTAATCGTTGTCAGTGGCCGAGAAATGAGAAGC	1879
Db	1818	TTGGAAGTTGACCCAAATGACGGCAGCGNAGGTTATATGTCGGGTCTATGAGCAATGAGAGC	1877
Qy	1880	GGTTTAACTCTTATCTTTTGTATAGCCAAACGAGGAGAAATGTGGCTAAAGGCTCT-----T	1933
Db	1878	GGTCTGACTCTCACATTTGAACGACCTACTGAGGCGAATGTTCGGCTAGCTTTACAGGAT	1937
Qy	1934	AAAAGCACGGCTCTGAGGCGTGGTATGTCCTTGAAACCGACATCCGGAAGGTGAAACGTA	1993
Db	1938	CAAGAGAAGGCTTCAGAAAGTGCTTTGGTAGTTTACCTCAAGAGAAGTTGGAAGAACCGTCC	1997
Qy	1994	AATAAAATTTCTATTGTCTGAGNAAGGAGATTTGCTGTGTGTGCAGAAAGTCATGTTTG	2053
Db	1998	ATGNAAGGTTTCGATGGCCAGAGGAGATTACAAATAGTGGTCTTGCTGGAGATCATCCG	2057
Qy	2054	ACGAATGCTAACTTATGACACCGAGAGTTGGAGTCCCTCAACGATTTCCATAAGGCTTGC	2113
Db	2058	GAGTCGTCTTATTCTAAGAACGAGGAGATAGAGTCTTTTAGACGAGTTTCATATGCGCAACG	2117
Qy	2114	GTGGATAGTGTGATTACAAAGCAATGGCATCGGTTGTCTACACTGGCTCACTCAAAAGTT	2173
Db	2118	GCAGATTCTGTTAATTCGTAAAGCAGATGAGCTCGATTGTGTACACGGGTCCGATTAAGAGTT	2177
Qy	2174	CAACAAATTAAGAACTATGTGGACAGTTTGGCAGCTTCGTTGTCGCGCCACTGTATCAAAAT	2233
Db	2178	CAGCAATGAATAAACTTTATCGATAGCCTGGTAGCATCACTACTGCTGGGTGCGAAT	2237
Qy	2234	CTATGCAAGTCACTAAAGGATGAAGTCGGGTATGATTCGATTCCAGGGAGAAAGTTGGT	2293
Db	2238	CTCGTCAAGATCCTCAAAGATACAGCTGCTATTTCACCTTGAAACCCCGTCAAAAGTTTGA	2297
Qy	2294	GTTTGGAGATGTCACTTTTGAAAAAGTGGCTCTCAAACTCGCGGCAAGGTCAATCATGG	2353
Db	2298	GTCTTGGATGTTCATCTAGGAAGTGTTAATCAAACCAACGGCCAAAGAGTCATGCATGG	2357
Qy	2354	GGAGTTCCTCTGGATTACAGGGGAAAATGTTTTACTGCACCTTCTATCTTATGAGGAGAT	2413
Db	2358	GGTGTGTTGAAACCCACCGAGGAAGTATCATGTGGCGCTTTTGGAAATATGATGACGAG	2417
Qy	2414	AGAATGCTGACTGAGAGCGACTGGAGAGGGTGGCTGTATCATCTGATCAAAATGGTATAT	2473
Db	2418	GGTGTGTGACATCGATGATTGGAGAAGAGTAGCTGTCAAGTCTGAGTCTGTGTGTTTAT	2477
Qy	2474	TCGTATATTGCAAGCTCCAAAATCTGAGGAAAACAAATGAGAGACGTTGAACCCACGAA	2533
Db	2478	TCCGACATGGCGAACTTCAGAACTCTCGCAGACTGCTTGCAAAACGGAGAACCGCATGTC	2537
Qy	2534	CCCTACTCAAGATGTTACTTTGTGGATGGGGTGCTGTTGTGTGAAAGTACAAAGGAGAT	2593
Db	2538	AGTAGCCAAAGGTTGTCTTTGTGGACGGAGTTCGGGGCTGTGGGAAAAACAAAGAAAT	2597
Qy	2594	TTTTGAAAGATTGATCTTTGATGAGGATTTGATCTTTGGTTCTCTGAAAAACAGCTGCTGCT	2653
Db	2598	CTTTCAGGGTTAATTTTGTATGAAGATCTAATTTTAGTACCTGGGAAGCAAGCCGCGAA	2657
Qy	2654	ATGATCAGAAAGAGGGCTAATTCATCTGGACTGATTAAGAGCCAAATGGCAATGTGAGA	2713

